Webster Lake
Aquatic Vegetation Management Plan
2007 Update-Draft

November 28, 2007

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Executive Summary

Aquatic Control was contracted by the Webster Lake Conservation Association to complete aquatic vegetation sampling in order to update their lakewide, long-term integrated aquatic vegetation management plan. Funding for development of this plan update was obtained from the Webster Lake Conservation Association and the Indiana Department of Natural Resources-Division of Fish and Wildlife as part of the Lake and River Enhancement fund (LARE). The update serves as a tool to track changes in the vegetation community, to adjust the action plan as needed, and to maintain eligibility for additional LARE funds. Items covered include the 2007 sampling results, a review of the 2007 vegetation controls, and updates to the budget and action plans.

Aquatic vegetation is an important component of lakes in Indiana; however, as a result of many factors this vegetation can develop to a nuisance level. Nuisance aquatic vegetation, as used in this paper, describes plant growth that negatively impacts the present uses of the lake including fishing, boating, swimming, aesthetic, and lakefront property values. The primary nuisance species within Webster and Backwater Lakes are the exotic plants Eurasian watermilfoil (*Myriophyllum spicatum)* and curlyleaf pondweed (*Potamogetan crispus)*. Other nuisance vegetation, which has reached nuisance levels in Webster Lake includes the native species common coontail (*Ceratophyllum demersum)* and duckweed (*Lemna spp*.). Due to the morphology of the lakes and extensive shallow areas, a large percentage of the lakes can become infested with heavy growths of these nuisance species.

The 2006 update recommended completing similar treatments of milfoil and curlyleaf pondweed on Webster Lake, while it was recommended that Backwater Lake be treated with a combination of herbicides for control of both curlyleaf pondweed and milfoil. Along with the treatments, the update also recommended three Tier II surveys along with an invasive mapping survey. WLCA was awarded a grant of $20,000 for treatment of milfoil and $6,000 for the plan update and plant sampling.

On April 3, 2007, Tier II surveys were completed on both lakes. These surveys indicated that there was a reduction in milfoil and curlyleaf abundance on Webster Lake while levels exhibited little change on Backwater Lake when compared to the previous spring's sampling. The first treatments were completed on April 24. A total of 104 acres of curlyleaf pondweed was treated on Webster Lake with Aquathol K herbicide at a rate of 1.0 ppm. This was the second season for this treatment. On the same day the lower half of Backwater Lake was treated with a mixture of Aquathol K and DMA 4. This was the first season for this type of treatment on Backwater Lake. Both of these treatments were funded by WLCA. Invasive mapping and Tier II surveys were completed on both lakes again on May 30. Surveys indicated that there was a reduction in curlyleaf in both lakes. Milfoil abundance had declined in Backwater Lake but increased in Webster Lake when compared to the April sampling. However, the May survey also indicated that milfoil had declined on Webster Lake when compared to May of 2006. On June 12, 2007, 40.4 acres of milfoil was treated with Renovate herbicide. This treatment was funded by LARE. The following day, contact herbicide treatments were completed along the

shoreline of Webster and Backwater Lakes for control nuisance vegetation. On August 13, 2007, Tier II surveys were completed on both lakes. Invasive species had significantly declined on both lakes when compared to the May survey results. Native vegetation remained abundant throughout both lakes. A public meeting was held on September 26, 2007 in order to inform lake users of the treatment and sampling completed during 2007 and to gain lake user input. Those in attendance appeared to be pleased with the results of the treatments, and wished to continue with the LARE funded controls.

Due to the success of the past treatment it is recommended that WLCA continue with a similar plan of action. It is recommended that WLCA requests LARE for $25,500 for a combination treatment of up to 75 acres curlyleaf pondweed and Eurasian watermilfoil in Backwater Lake, $37,500 for treatment of up to 125 acres of curlyleaf pondweed in Webster Lake, $25,000 for treatment of up to 57 acres of milfoil in Webster Lake, and $6,000 for plant sampling and plan updates on both lakes. In addition, WLCA should continue to fund shoreline treatments for control of nuisance vegetation.

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1.0 INTRODUCTION

This report was created in order to update the Webster Lake Aquatic Vegetation Management Plan. The plan update was funded by the Indiana Department of Natural Resources Lake and River Enhancement Program (LARE) and the Webster Lake Conservation Association. The update serves as a tool to track changes in the vegetation community, to adjust the action plan as needed, and to maintain eligibility for additional LARE funds. Items covered include the 2007 sampling results, a review of the 2007 vegetation controls, and updates to the budget and action plans. This plan update includes both Backwater and Webster Lake. Once reviewed and approved, the update should be included in the original vegetation management plan, following the 2006 update and prior to the original appendix.

2.0 2007 PLANT SAMPLING

Three sampling events took place this season on Webster and Backwater Lake. This is more sampling than required by LARE, but it was decided to complete additional surveys in order to better document changes in the plant community following an early season curlyleaf pondweed treatment. The sampling consisted of three Tier II surveys and one invasive plant survey on both lakes.

2.1 Webster Lake Sampling Results

2.1.1 April survey, Webster Lake

On April 3, 2007 a Tier II survey was completed on Webster Lake. A Secchi disk reading was taken prior to sampling and was found to be 6.0 feet. Plants were present to a maximum depth of 17 feet. The same 90 points that were sampled in 2006 were used in this survey. Native plants were present at 63 of the sites. A total of eight species were collected of which six were natives. The maximum number of species collected at a single site was four. The mean number of species collected per site was 1.06 and the mean number of native species collected per site was 0.97 (Table 1).

Table 1. Occurrence and abundance of submersed aquatic plants in Webster Lake April 3, 2007.

Occurrence and abundance of submersed aquatic plants in Webster Lake							
County:	Kos	Sites with plants:	63	Mean species/site:	1.06		
Date:	4/3/2007	Sites with native plants:	63	Standard error (ms/s):	0.28		
Secchi (ft):	6	Number of species:	8	Mean native species/site:	0.97		
Maximum plant depth (ft):	17	Number of native species:	6	Standard error (mns/s):	0.25		
Trophic status	Mesotrophic	Maximum species/site:	4	Species diversity:	0.65		
Total sites:	90			Native species diversity:	0.48		

All depths (0 to 25 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	58.9	41.1	38.9	11.1	8.9	19.8
slender naiad	13.3	86.7	6.7	4.4	2.2	3.1
curlyleaf pondweed	12.2	87.8	6.7	4.4	1.1	2.9
Eurasian watermilfoil	8.9	91.1	4.4	2.2	2.2	2.2
Chara	6.7	93.3	3.3	1.1	2.2	3.1
sago pondweed	3.3	96.7	0.0	1.1	2.2	0.7
flatstemmed pondweed	1.1	98.9	1.1	0.0	0.0	0.2
water stargrass	1.1	98.9	1.1	0.0	0.0	0.2

All depths (0 to 5 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	54.5	45.5	36.4	9.1	9.1	14.5
Chara	18.2	81.8	9.1	4.5	4.5	7.3
Eurasian watermilfoil	18.2	81.8	9.1	4.5	4.5	5.5
slender naiad	13.6	86.4	0.0	9.1	4.5	4.5
curlyleaf pondweed	9.1	90.9	4.5	0.0	4.5	1.8
sago pondweed	9.1	90.9	0.0	4.5	4.5	1.8

All depths (5 to 10 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	67.4	32.6	50.0	10.9	6.5	19.6
curlyleaf pondweed	17.4	82.6	4.3	6.5	0.0	4.3
slender naiad	17.4	82.6	13.0	2.2	2.2	3.5
Eurasian watermilfoil	8.7	91.3	4.3	2.2	2.2	1.7
Chara	4.3	95.7	2.2	0.0	2.2	2.6
sago pondweed	2.2	97.8	0.0	0.0	2.2	0.4
flatstemmed pondweed	2.2	97.8	2.2	0.0	0.0	0.4
water stargrass	2.2	97.8	2.2	0.0	0.0	0.4

All depths (10 to 15 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	53.8	46.2	23.1	15.4	15.4	29.2
curlyleaf pondweed	7.7	92.3	0.0	7.7	0.0	1.5
slender naiad	7.7	92.3	0.0	7.7	0.0	1.5

All depths (15 to 20 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	33.3	66.7	11.1	11.1	11.1	20.0

Common coontail occurred at the highest percentage of sample sites (58.9%) and had the highest dominance rating (19.8). Location and density of coontail is illustrated in Figure 1. Slender naiad ranked second in percent occurrence, followed by curlyleaf pondweed which was found at 12.2% of sites (Figure 2). Eurasian watermilfoil was found at 8.9% of sites (Figure 3). Chara, sago pondweed, flatstem pondweed, and water stargrass were all present at less than 10% of the sample sites.

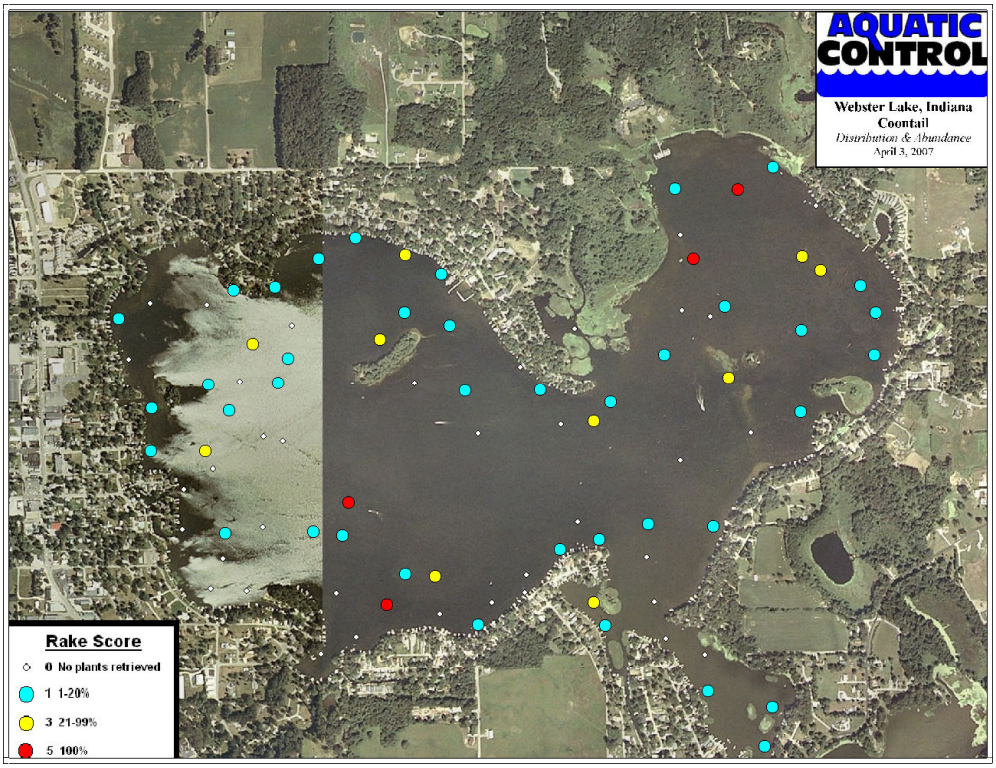

Figure 1. Webster Lake, coontail distribution and abundance, April 3, 2007.

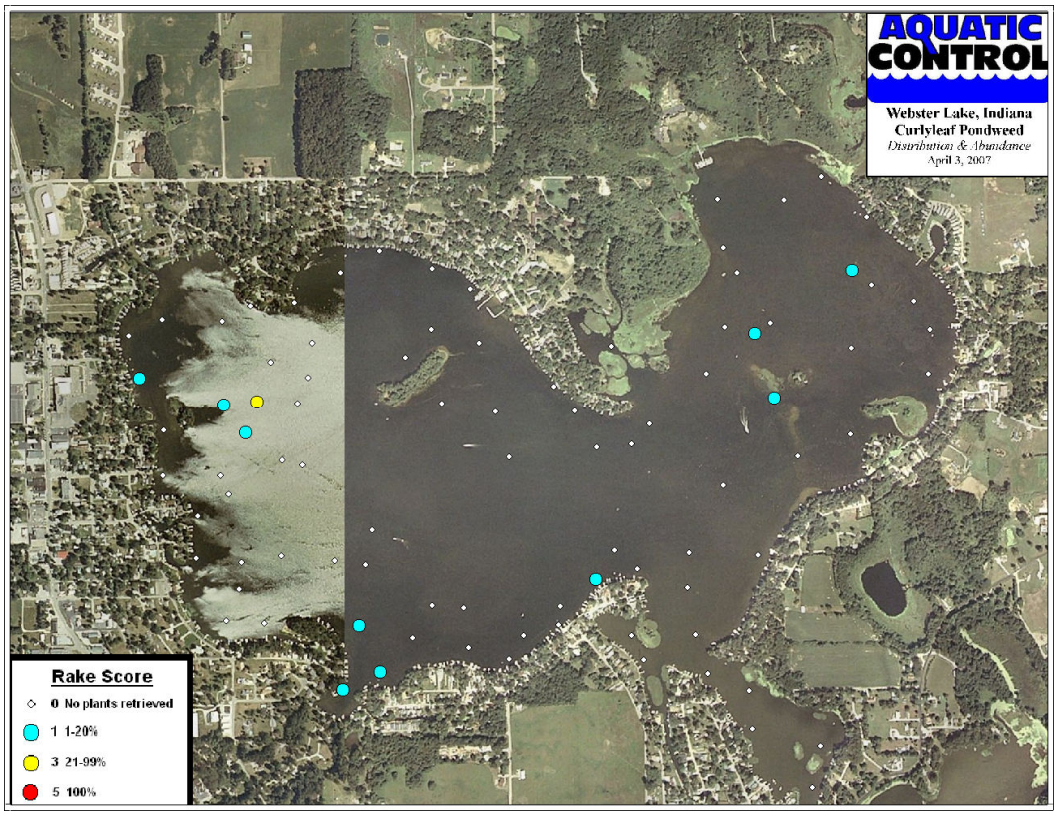

Figure 2. Webster Lake, curlyleaf pondweed distribution and abundance, April 3, 2007.

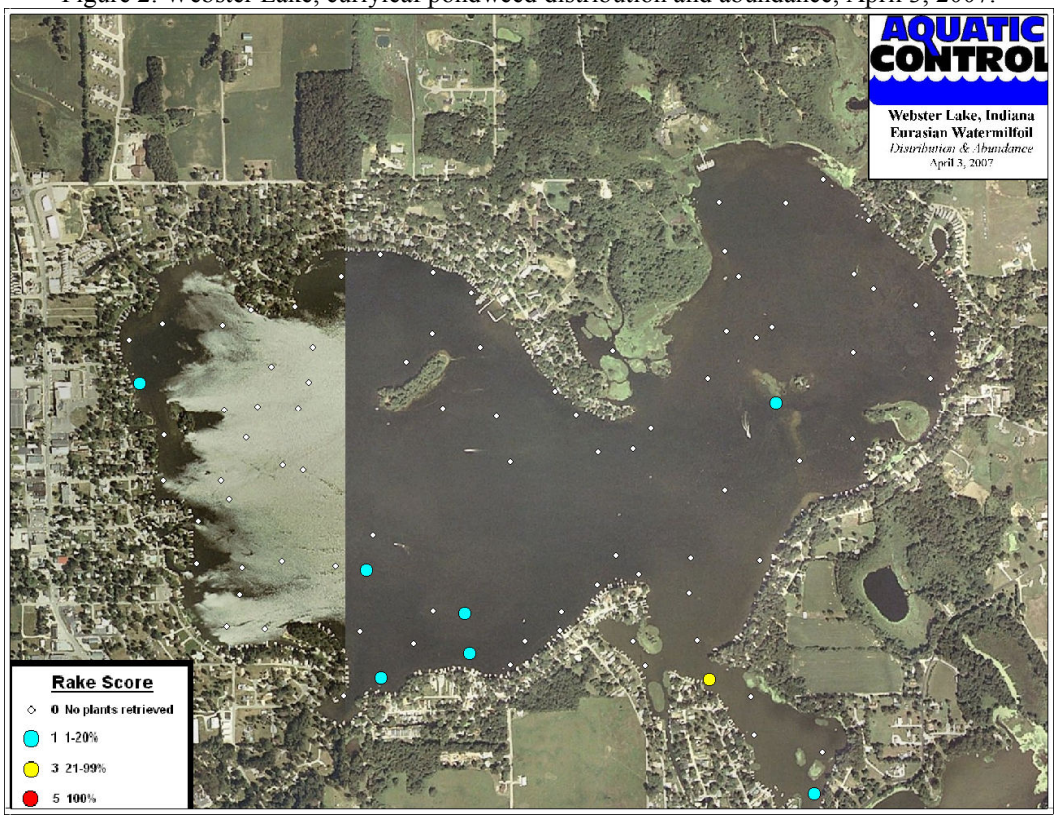

Figure 3. Webster Lake, Eurasian watermilfoil distribution and abundance, April 3, 2007.

2.1.2 May survey, Webster Lake

On May 31, 2007 a second round of sampling was completed on Webster Lake. This sampling included invasive species mapping along with another Tier II survey. A Secchi disk reading was taken prior to sampling and was found to be 8.0 feet. Plants were present to a maximum of 20 feet. A total of 40.4 acres of Eurasian watermilfoil was detected of which 9.2 acres was considered dense (greater than 50% abundance within the area). The majority of the milfoil was located in the eastern third of the lake (Figure 4).

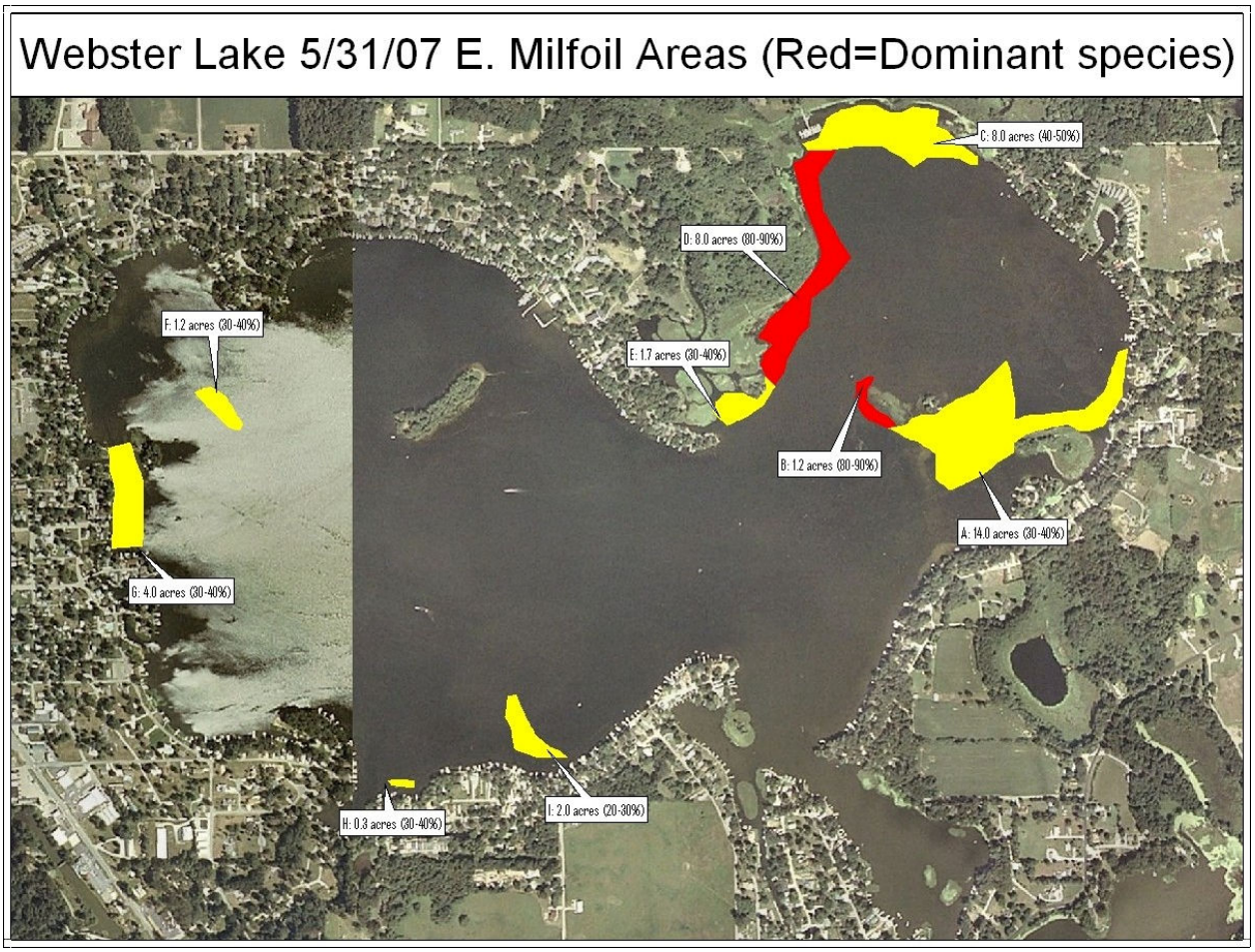

Figure 4. Webster Lake Eurasian watermilfoil location, May 31, 2007

Curlyleaf pondweed was also included in the invasive species mapping. This species was very sparse, which was likely due to the early season treatments completed the previous two seasons. Curlyleaf was only found in a small 0.1 acre area in the northeast corner of the lake (Figure 5).

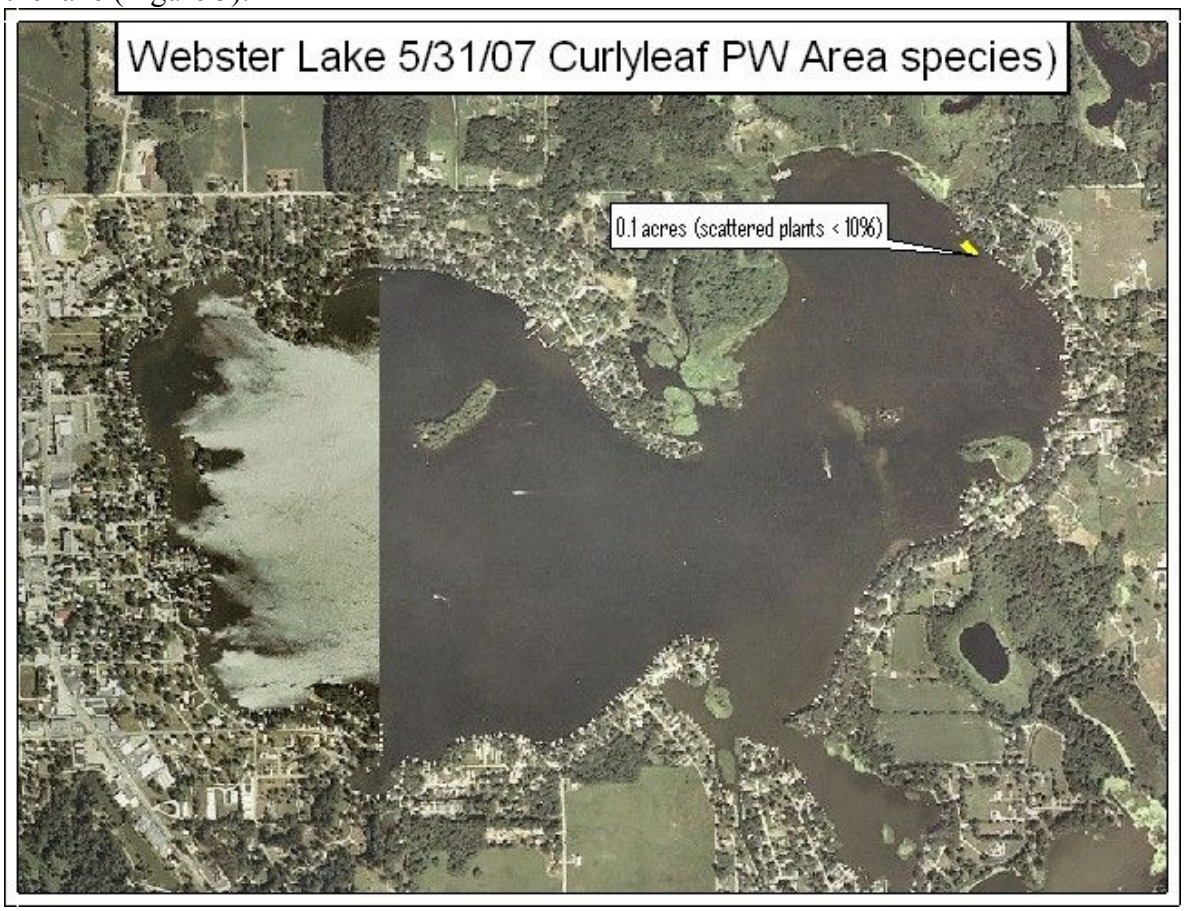

Figure 5. Webster Lake curlyleaf pondweed location, May 31, 2007.

A Tier II survey was also completed on May 30 (Table 2). The same 90 points were sampled. Plants were present at 77 of the 90 sites. A total of 9 species were collected of which 8 of the species were native. The maximum number of species per site was 6 and the mean number of species collected per site was 1.31. The mean number of native species collected per site was 1.17.

Table 2. Occurrence and abundance of submersed aquatic plants in Webster Lake, May 30, 2007.

Occurrence and abundance of submersed aquatic plants in Webster Lake							
County:	Kosciusko	Sites with plants:	77	Mean species/site:	1.31		
Date:	5.30.07	Sites with native plants:	77	Standard error (ms/s):	0.0982296		
Secchi (ft):	8	Number of species:	9	Mean native species/site:	1.17		
Maximum plant depth (ft):	17	Number of native species:	8	Standard error (mns/s):	0.0794016		
Trophic status	Mesotrophic	Maximum species/site:	6	Species diversity:	0.63		
Total sites:	90			Native species diversity:	0.54		
All depths (0 to 25 ft)	**Frequency of**	**Rake score frequency per species**				**Plant Dominance**	
Species	**Occurrence**	**0**	**1**	**3**	**5**		
common coontail	76.4	23.6	19.1	27.0	31.5	44.5	
Eurasian watermilfoil	14.4	85.6	0.0	6.7	7.8	5.6	
Chara	11.1	88.9	2.2	5.6	3.3	6.2	
sago pondweed	9.0	91.0	1.1	5.6	2.2	3.6	
slender naiad	7.8	92.2	1.1	2.2	4.4	2.9	
American elodea	7.8	92.2	0.0	5.6	2.2	1.6	
horned pondweed	2.2	97.8	0.0	0.0	2.2	0.9	
large leaf pondweed	1.1	98.9	0.0	1.1	0.0	0.2	
northern watermilfoil	1.1	98.9	0.0	0.0	1.1	0.2	
All depths (0 to 5 ft)	**Frequency of**	**Rake score frequency per species**				**Plant Dominance**	
Species	**Occurrence**	**0**	**1**	**3**	**5**		
common coontail	62.1	37.9	20.7	31.0	10.3	26.2	
Chara	34.5	65.5	6.9	17.2	10.3	19.3	
American elodea	17.2	82.8	0.0	10.3	6.9	3.4	
Eurasian watermilfoil	13.8	86.2	0.0	10.3	3.4	2.8	
slender naiad	10.3	89.7	3.4	3.4	3.4	2.1	
horned pondweed	6.9	93.1	0.0	0.0	6.9	2.8	
large leaf pondweed	3.4	96.6	0.0	3.4	0.0	0.7	
All depths (5 to 10 ft)	**Frequency of**	**Rake score frequency per species**				**Plant Dominance**	
Species	**Occurrence**	**0**	**1**	**3**	**5**		
common coontail	92.5	7.5	17.5	27.5	47.5	57.5	
Eurasian watermilfoil	20.0	80.0	0.0	7.5	12.5	10.0	
sago pondweed	20.0	80.0	2.5	12.5	5.0	8.0	
slender naiad	7.5	92.5	0.0	0.0	7.5	4.5	
American elodea	5.0	95.0	0.0	5.0	0.0	1.0	
All depths (10 to 15 ft)	**Frequency of**	**Rake score frequency per species**				**Plant Dominance**	
Species	**Occurrence**	**0**	**1**	**3**	**5**		
common coontail	83.3	16.7	8.3	33.3	41.7	63.3	
Eurasian watermilfoil	8.3	91.7	0.0	0.0	8.3	1.7	
All depths (15 to 20 ft)	**Frequency of**	**Rake score frequency per species**				**Plant Dominance**	
Species	**Occurrence**	**0**	**1**	**3**	**5**		
common coontail	44.4	55.6	33.3	0.0	11.1	17.8	

Once again, common coontail was collected at the highest percentage of sample sites (76.4%) and had the highest dominance index (44.5). Location and density of this species is illustrated in Figure 6. Eurasian watermilfoil ranked second in frequency of occurrence (14.4%) and location and density is illustrated in Figure 7. Chara was the only other species present at more than 10% of sites. Sago pondweed, slender naiad, American elodea, horned pondweed, largeleaf pondweed, and northern watermilfoil were all present at less than 10% of the sample sites.

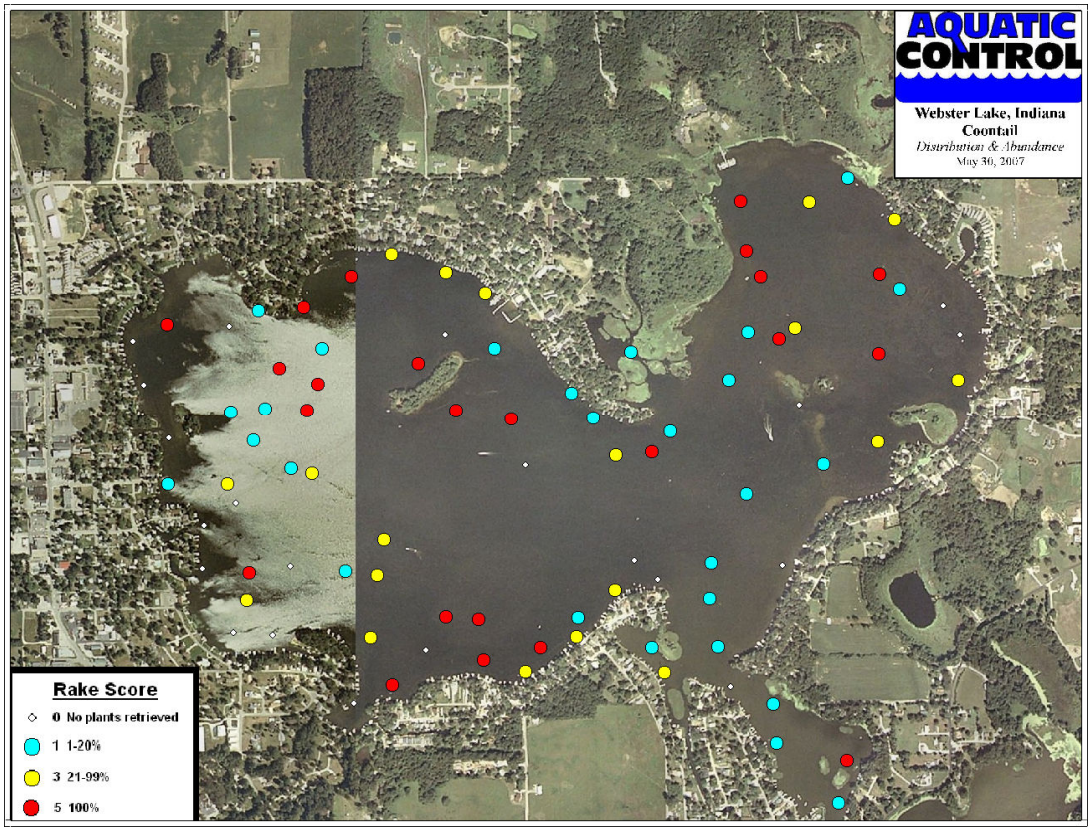

Figure 6. Webster Lake, common coontail distribution and abundance, May 30, 2007.

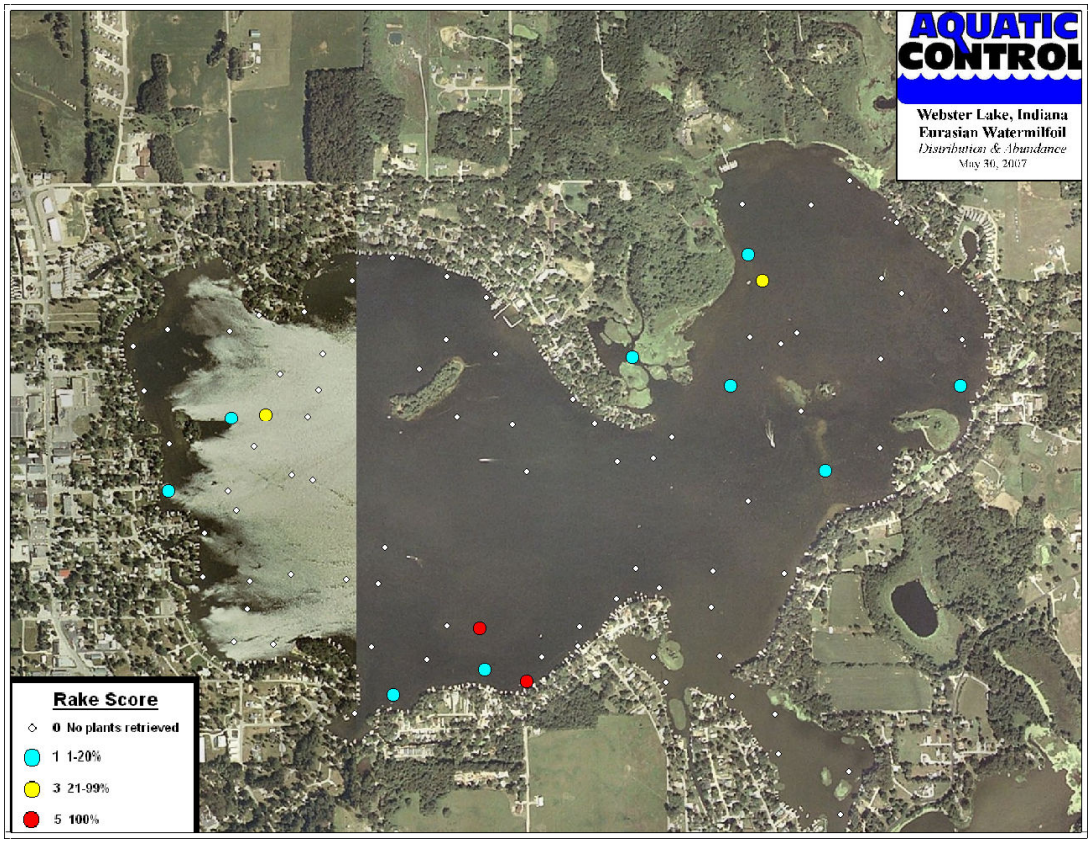

Figure 7. Webster Lake, Eurasian watermilfoil distribution and abundance, May 31, 2007.

2.1.3 August survey, Webster Lake

A third and final Tier II survey of Webster Lake was completed on August 13, 2007 (Table 3). The same 90 sites were sampled. A Secchi disk reading was taken prior to sampling and was found to be 7.0 feet. Submersed vegetation was present at 68 of the 90 sites. A total of 8 species were collected of which 7 of the species were native. The maximum number of species per site was 3 and the mean species collected per site was 0.94.

Table 3. Occurrence and abundance of submersed aquatic plants in Webster Lake, August 13, 2007.

Occurrence and abundance of submersed aquatic plants in Webster Lake							
County:	Kosciusko	Sites with plants:	68		Mean species/site:	0.94	
Date:	8/13/2007	Sites with native plants:	68		Standard error (ms/s):	0.0779915	
Secchi (ft):	7	Number of species:	8		Mean native species/site:	0.92	
Maximum plant depth (ft):	18	Number of native species:	7		Standard error (mns/s):	0.0728033	
Trophic status	Mesotrophic	Maximum species/site:	3		Species diversity:	0.40	
Total sites:	90				Native species diversity:	0.37	

All depths (0 to 25 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	72.2	27.8	25.6	10.0	36.7	47.8
Chara	7.8	92.2	6.7	0.0	1.1	2.0
slender naiad	6.7	93.3	2.2	1.1	3.3	3.1
Eurasian watermilfoil	2.2	97.8	0.0	0.0	2.2	0.4
sago pondweed	2.2	97.8	0.0	0.0	2.2	0.4
common bladderwort	1.1	98.9	0.0	1.1	0.0	0.2
flatstemmed pondweed	1.1	98.9	1.1	0.0	0.0	0.2
water stargrass	1.1	98.9	0.0	0.0	1.1	1.1

All depths (0 to 5 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	58.6	41.4	31.0	3.4	24.1	32.4
Chara	17.2	82.8	13.8	0.0	3.4	4.8
slender naiad	13.8	86.2	3.4	3.4	6.9	6.9
common bladderwort	3.4	96.6	0.0	3.4	0.0	0.7
Eurasian watermilfoil	3.4	96.6	0.0	0.0	3.4	0.7
flatstemmed pondweed	3.4	96.6	3.4	0.0	0.0	0.7
sago pondweed	3.4	96.6	0.0	0.0	3.4	0.7

All depths (5 to 10 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	88.6	11.4	27.3	13.6	47.7	61.4
Chara	4.5	95.5	4.5	0.0	0.0	0.9
slender naiad	4.5	95.5	2.3	0.0	2.3	1.8
Eurasian watermilfoil	2.3	97.7	0.0	0.0	2.3	0.5
sago pondweed	2.3	97.7	0.0	0.0	2.3	0.5
water stargrass	2.3	97.7	0.0	0.0	2.3	2.3

All depths (10 to 15 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	71.4	28.6	14.3	0.0	57.1	60.0

All depths (15 to 20 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	40.0	60.0	10.0	20.0	10.0	24.0

By far the most abundant species was coontail, which was present at 72.2% of sites (Figure 8). Chara was now the second most abundant species, but only occurred at 7.8 % of sites. Slender naiad ranked third in percent occurrence (6.7%). Eurasian watermilfoil, and sago pondweed were only collected at two sites. Location and density of Eurasian watermilfoil is illustrated in Figure 9. Common bladderwort, flatstem pondweed, and water stargrass were only present at single sites.

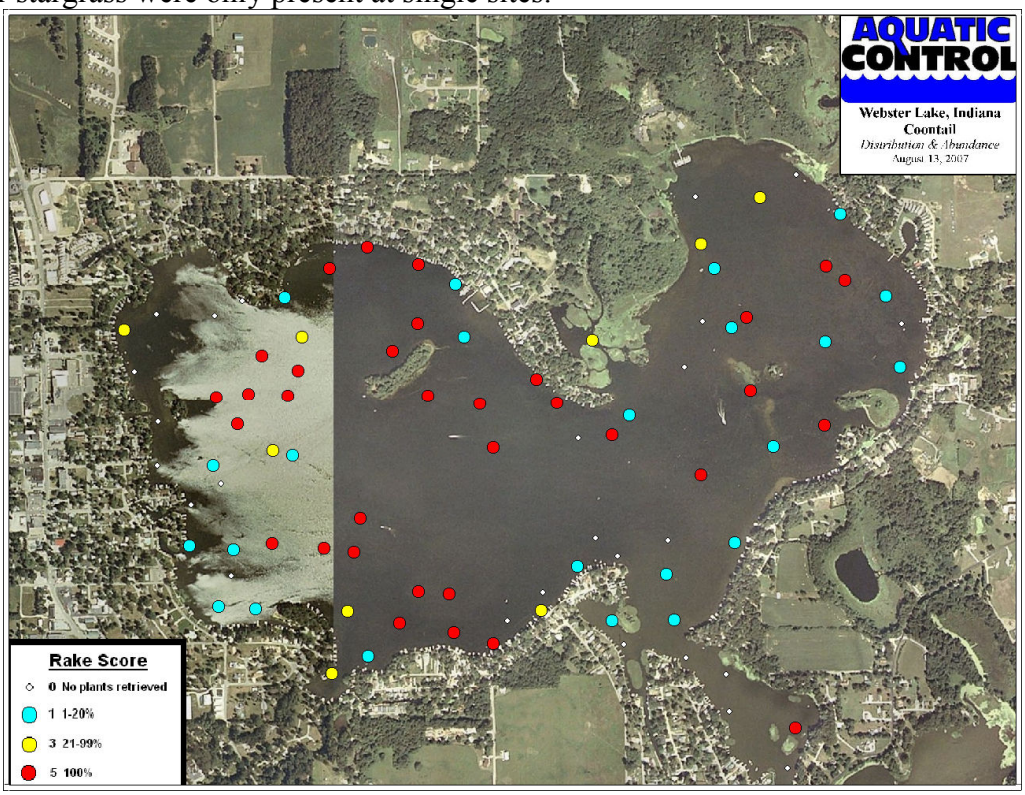

Figure 8. Webster Lake, coontail distribution and abundance, August 13, 2007

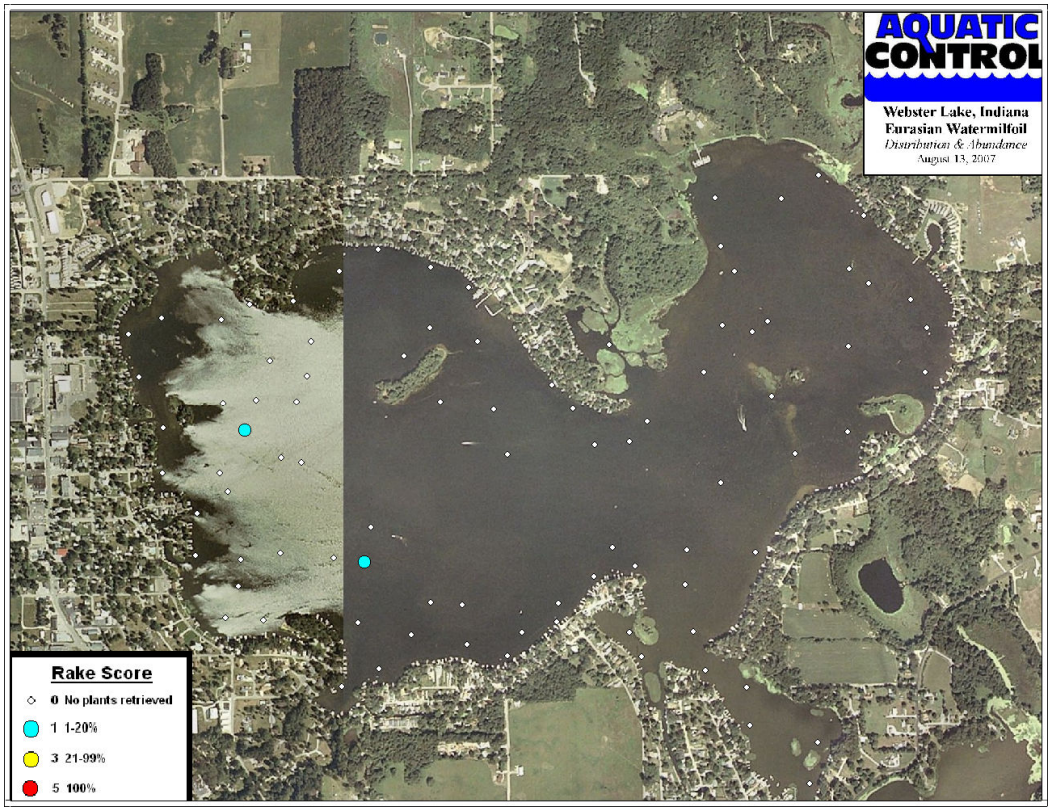

Figure 9. Webster Lake, Eurasian watermilfoil distribution and abundance, August 13, 2007

2.2 Backwater Lake Sampling Results

Backwater Lake was surveyed on three different occasions in 2007. A Tier II surveys were completed on April 3, May 31, and August 13.

2.2.1 April survey, Backwater Lake

On April 3, 2007 the first Tier II survey was completed on Backwater Lake (Table 4). A Secchi disk reading was taken prior to sampling and was found to be 4.0 feet. Plants were present to a maximum depth of 6 feet. The same 50 sites that were sampled in the summer of 2006 were sampled again during the April survey. All 50 sites had vegetation and native vegetation was present at 47. A total of six species were collected of which four of the species were native. The maximum number of species collected at a site was 4 and the mean species per site was 1.96. Mean number of native species per site was 1.48.

Table 4. Occurrence and abundance of submersed aquatic plants in Backwater Lake, April 3, 2007.

Occurrence and abundance of submersed aquatic plants in Backwater Lake						
County:	Kos	Sites with plants:	50	Mean species/site:	1.96	
Date:	4/3/2007	Sites with native plants:	47	Standard error (ms/s):	0.107	
Secchi (ft):	4	Number of species:	6	Mean native species/site:	1.48	
Maximum plant depth (ft):	6	Number of native species:	4	Standard error (mns/s):	0.100	
Trophic status	Mesotrophic	Maximum species/site:	4	Species diversity:	0.68	
Total sites:	50			Native species diversity:	0.33	

All depths (0 to 10 ft)	Frequency of Occurrence	Rake score frequency per species				Plant Dominance
Species		0	1	3	5	
common coontail	94.0	6.0	24.0	18.0	52.0	57.2
Eurasian watermilfoil	48.0	52.0	6.0	14.0	28.0	25.6
curlyleaf pondweed	32.0	68.0	12.0	6.0	14.0	6.4
American elodea	12.0	88.0	0.0	2.0	8.0	2.4
nitella	8.0	92.0	4.0	0.0	4.0	1.6
slender naiad	2.0	98.0	0.0	0.0	2.0	0.4

All depths (0 to 5 ft)	Frequency of Occurrence	Rake score frequency per species				Plant Dominance
Species		0	1	3	5	
common coontail	93.8	6.3	25.0	14.6	54.2	57.1
Eurasian watermilfoil	47.9	52.1	6.3	12.5	29.2	26.3
American elodea	12.5	87.5	2.1	2.1	8.3	2.5
nitella	8.3	91.7	4.2	0.0	4.2	1.7
slender naiad	2.1	97.9	0.0	0.0	2.1	0.4

All depths (5 to 10 ft)	Frequency of Occurrence	Rake score frequency per species				Plant Dominance
Species		0	1	3	5	
curlyleaf pondweed	100.0	0.0	0.0	100.0	0.0	20.0
common coontail	100.0	0.0	0.0	100.0	0.0	60.0
Eurasian watermilfoil	50.0	50.0	0.0	50.0	0.0	10.0

The most frequently occurring species was coontail, which was present at 94.0% of sites. Location and density of this species is illustrated in Figure 10. Eurasian watermilfoil ranked second in frequency of occurrence (48.0%) followed by curlyleaf pondweed (32.0%). Location and density of these two species is illustrated in Figure 11 and 12. American elodea, nitella, and slender naiad were also collected.

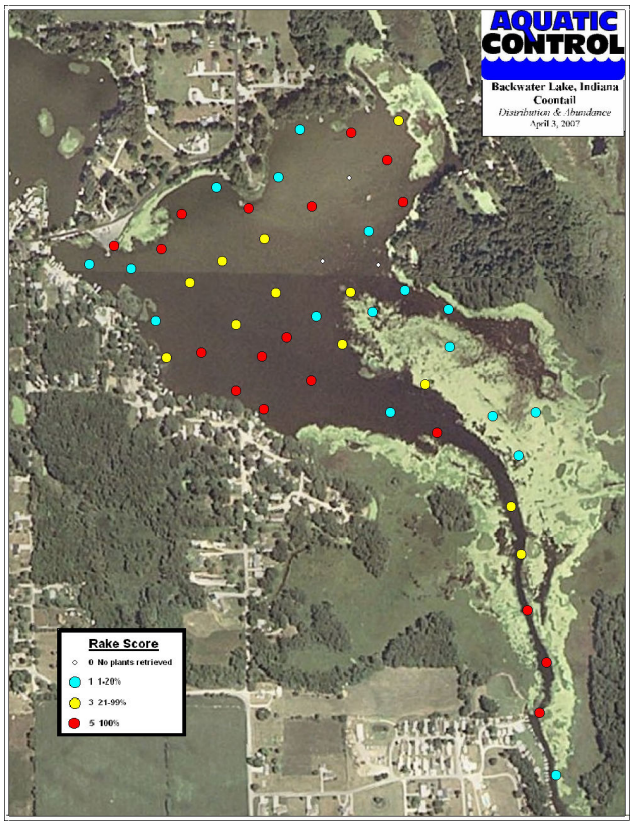

Figure 10. Backwater Lake, coontail distribution and abundance, April 3, 2007

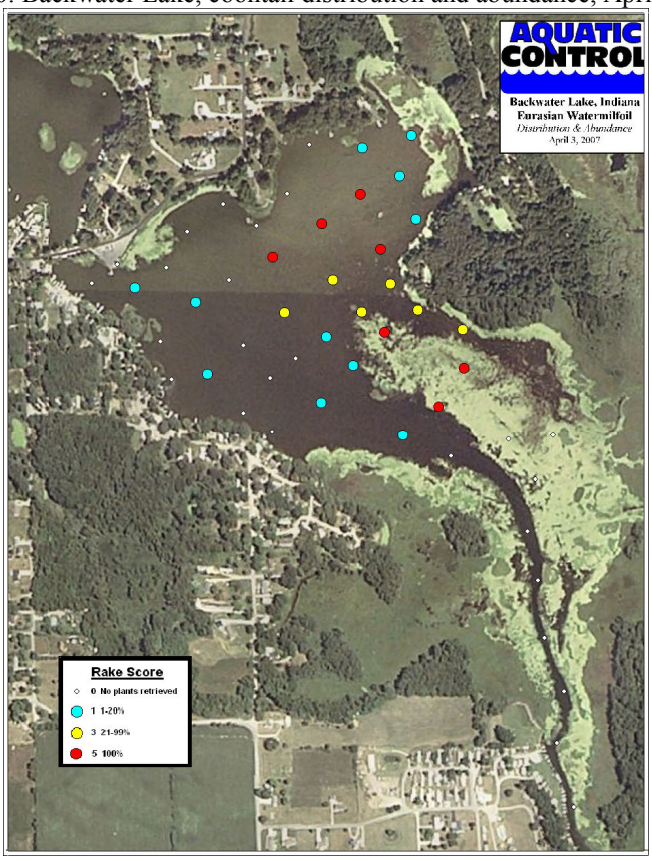

Figure 11. Backwater Lake, Eurasian watermilfoil distribution and abundance, April 3, 2007

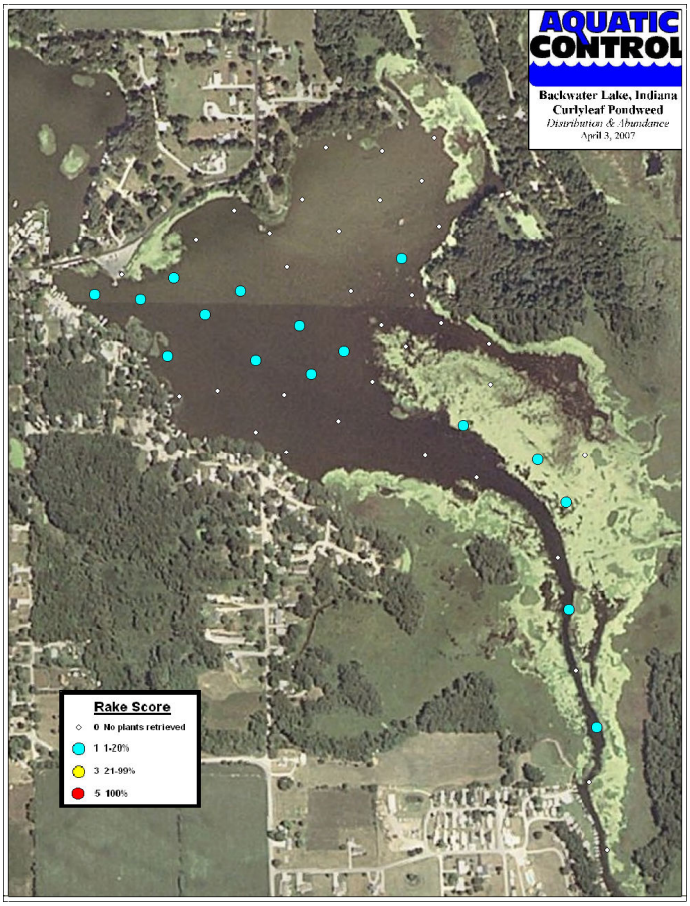

Figure 12. Backwater Lake, curlyleaf pondweed distribution and abundance, April 3, 2007

2.2.2 May Survey, Backwater Lake

On May 30, 2007 an invasive species mapping survey was completed on Backwater Lake. A Secchi disk reading was taken prior to sampling and was found to be 6.0 feet. A total of 3.2 acres of milfoil was mapped. Milfoil beds primarily occurred in the central section of the lake (Figure 13). A dense bed of curlyleaf pondweed was also found covering 3.6 acres in the southern half of Backwater Lake (Figure 14).

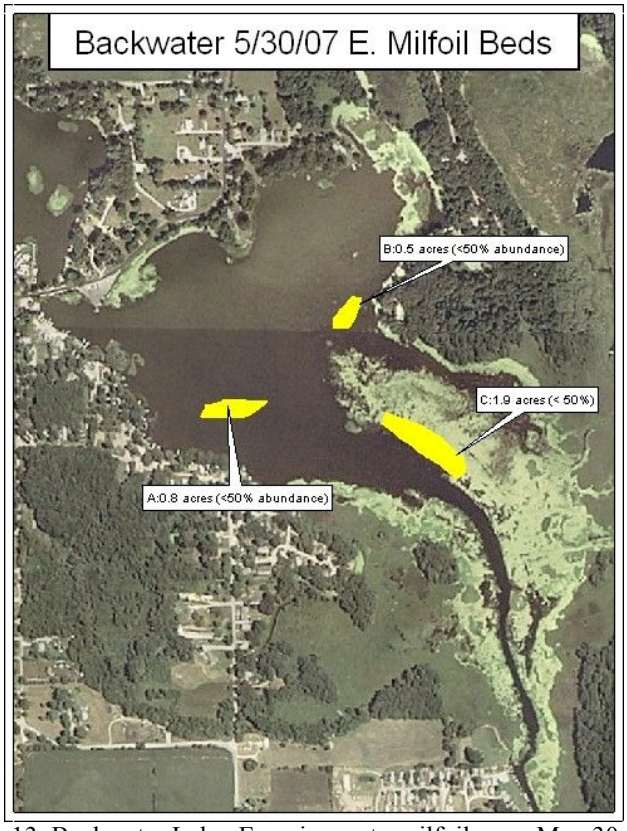

Figure 13. Backwater Lake, Eurasian watermilfoil map, May 30, 2007.

Figure 14. Backwater Lake, curlyleaf pondweed map, May 30, 2007.

A Tier II survey was completed immediately following the invasive mapping survey (Table 5). Plants were present to a maximum depth of 6 feet. The same 50 sites that were sampled in this survey as were sampled in the spring survey. All 50 sites had vegetation and native vegetation was present at 49 of the 50 sites. Seven species were collected of which five of the species were native. The maximum number of species collected at a site was 5 and the mean species per site was 1.40. Mean number of native species per site was 1.26.

Table 5. Occurrence and abundance of submersed aquatic plants in Backwater Lake, May 30, 2007.

Occurrence and abundance of submersed aquatic plants in Backwater Lake							
County:	Koskiusko	Sites with plants:	50	Mean species/site:	1.40		
Date:	5.30.07	Sites with native plants:	49	Standard error (ms/s):	0.12454		
Secchi (ft):	6	Number of species:	7	Mean native species/site:	1.26		
Maximum plant depth (ft):	6	Number of native species:	5	Standard error (mns/s):	0.1061766		
Trophic status	Mesotrophic	Maximum species/site:	5	Species diversity:	0.49		
Total sites:	50			Native species diversity:	0.28		
All depths (0 to 25 ft)	**Frequency of**	**Rake score frequency per species**				**Plant Dominance**	
Species	**Occurrence**	**0**	**1**	**3**	**5**		
common coontail	98.0	2.0	12.0	40.0	46.0	67.2	
Eurasian watermilfoil	14.0	86.0	0.0	10.0	4.0	3.6	
curlyleaf pondweed	10.0	90.0	0.0	4.0	6.0	4.4	
American elodea	8.0	92.0	0.0	2.0	6.0	3.2	
sago pondweed	4.0	96.0	0.0	2.0	2.0	0.8	
small pondweed	4.0	96.0	0.0	0.0	4.0	0.8	
flatstemmed pondweed	2.0	98.0	0.0	0.0	2.0	1.2	
All depths (0 to 5 ft)	**Frequency of**	**Rake score frequency per species**				**Plant Dominance**	
Species	**Occurrence**	**0**	**1**	**3**	**5**		
common coontail	98.0	2.0	10.2	40.8	46.9	68.2	
Eurasian watermilfoil	14.3	85.7	0.0	10.2	4.1	3.7	
curlyleaf pondweed	10.2	89.8	0.0	4.1	6.1	4.5	
American elodea	8.2	91.8	0.0	2.0	6.1	3.3	
sago pondweed	4.1	95.9	0.0	2.0	2.0	0.8	
small pondweed	4.1	95.9	0.0	0.0	4.1	0.8	
flatstemmed pondweed	2.0	98.0	0.0	0.0	2.0	1.2	
All depths (5 to 10 ft)	**Frequency of**	**Rake score frequency per species**				**Plant Dominance**	
Species	**Occurrence**	**0**	**1**	**3**	**5**		
common coontail	100.0	0.0	100.0	0.0	0.0	20.0	

Once again coontail was the most abundant species and was present at all but one sample site. Location and density of coontail is illustrated in Figure 15. Eurasian watermilfoil ranked second in frequency of occurrence (14.0%) followed by curlyleaf pondweed (10.0%). Location and density of these two species is illustrated in Figure 16 and 17. American elodea, sago pondweed, small pondweed, and flatstem pondweed made up the remainder of the sample.

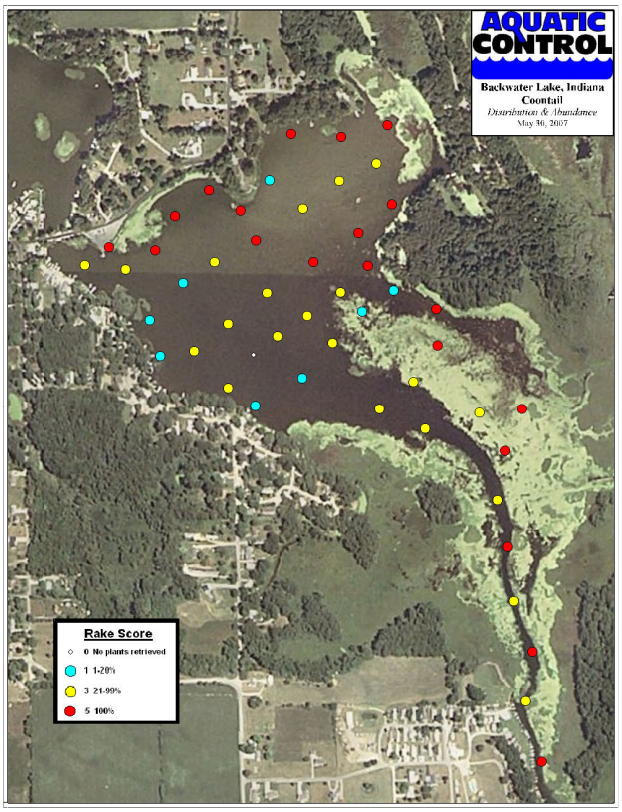

Figure 15. Backwater Lake, common coontail distribution and abundance, May 30, 2007.

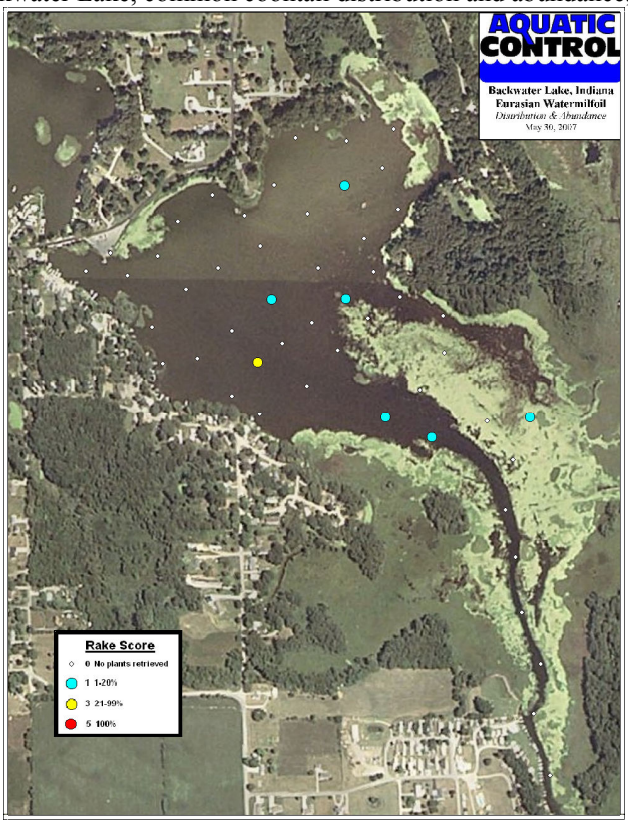

Figure 16. Backwater Lake, Eurasian watermilfoil distribution and abundance, May 30, 2007.

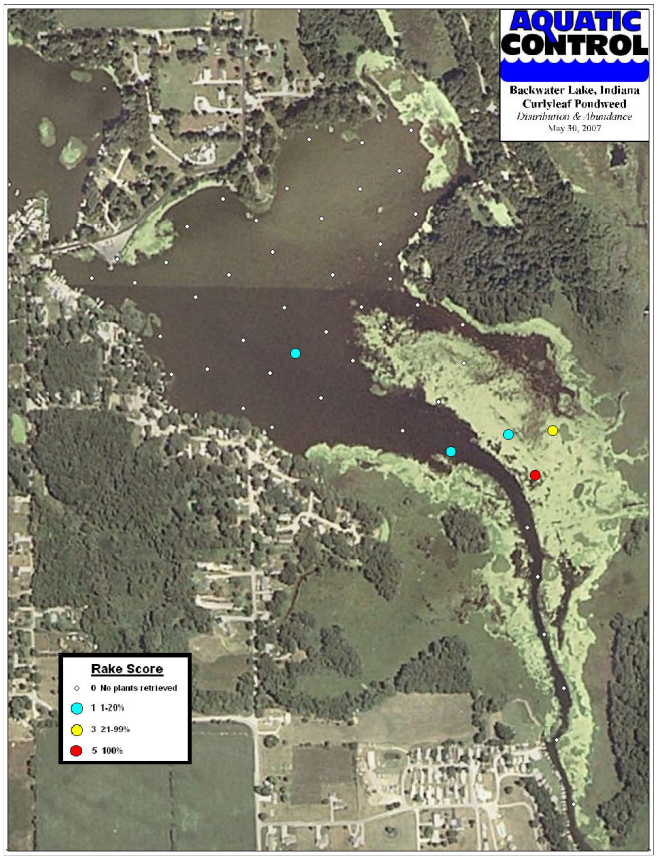

Figure 17. Backwater Lake, curlyleaf pondweed distribution and abundance, May 30, 2007.

2.2.3 August Survey, Backwater Lake

The last 2007 Tier II survey was completed on August 13. The same 50 sites were sampled. Vegetation was collected at all but one site. A total of 6 species were collected of which 5 were native. The maximum number of species per site was 4 and the mean number of species per site was 1.60 for all species and 1.28 for native species. Sampling data is summarized in Table 6.

Table 6. Occurrence and abundance of submersed aquatic plants in Backwater Lake, August 13, 2007.

Occurrence and abundance of submersed aquatic plants in Backwater Lake					
County:	Koskiusko	Sites with plants:	49	Mean species/site:	1.60
Date:	8/13/2007	Sites with native plants:	49	Standard error (ms/s):	0.117803
Secchi (ft):	4	Number of species:	6	Mean native species/site:	1.28
Maximum plant depth (ft):	6	Number of native species:	5	Standard error (mns/s):	0.0758086
Trophic status	Mesotrophic	Maximum species/site:	4	Species diversity:	0.59
Total sites:	50			Native species diversity:	0.42

All depths (0 to 25 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	96.0	4.0	14.0	16.0	66.0	76.8
Eurasian watermilfoil	32.0	68.0	2.0	2.0	28.0	8.8
sago pondweed	12.0	88.0	0.0	2.0	10.0	3.2
Chara	10.0	90.0	0.0	0.0	10.0	3.6
American elodea	8.0	92.0	0.0	0.0	6.0	1.6
slender naiad	2.0	98.0	2.0	0.0	0.0	0.4

All depths (0 to 5 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
common coontail	97.9	2.1	14.6	16.7	66.7	77.9
Eurasian watermilfoil	33.3	66.7	2.1	2.1	29.2	9.2
sago pondweed	10.4	89.6	0.0	2.1	8.3	2.9
American elodea	8.3	91.7	2.1	0.0	6.3	1.7
Chara	8.3	91.7	0.0	0.0	8.3	1.7
slender naiad	2.1	97.9	2.1	0.0	0.0	0.4

All depths (5 to 10 ft)	Frequency of	Rake score frequency per species				Plant Dominance
Species	Occurrence	0	1	3	5	
Chara	50.0	50.0	0.0	0.0	50.0	50.0
common coontail	50.0	50.0	0.0	0.0	50.0	50.0
sago pondweed	50.0	50.0	0.0	0.0	50.0	10.0

As expected, common coontail was the most frequently occurring species (96.0%). Distribution and abundance of common coontail is illustrated in Figure 18. Eurasian watermilfoil was present at 32% of sample sites (Figure 19). American elodea increased in abundance and was found at 20.0% of sites. Common naiad, sago pondweed and flatstem pondweed were the only other submersed species collected. Curlyleaf pondweed was not detected during this survey.

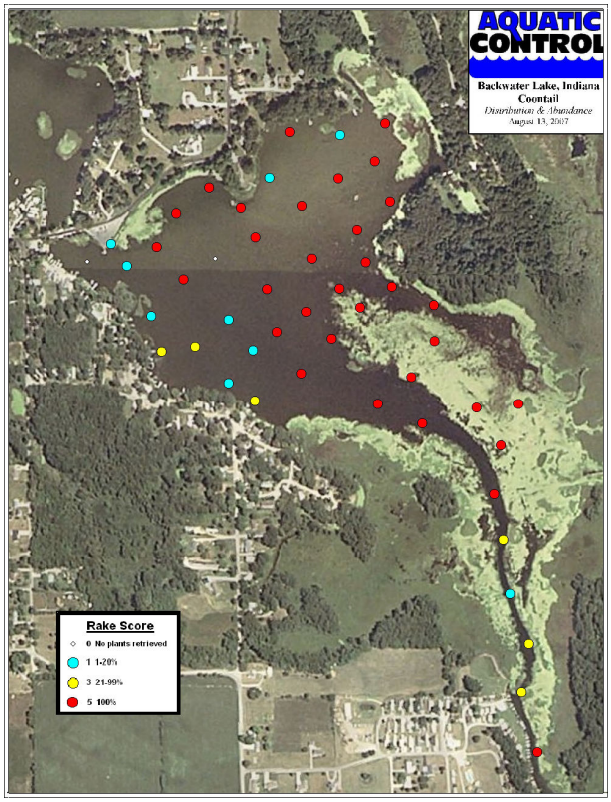

Figure 18. Backwater Lake, coontail distribution and abundance, August 13, 2007

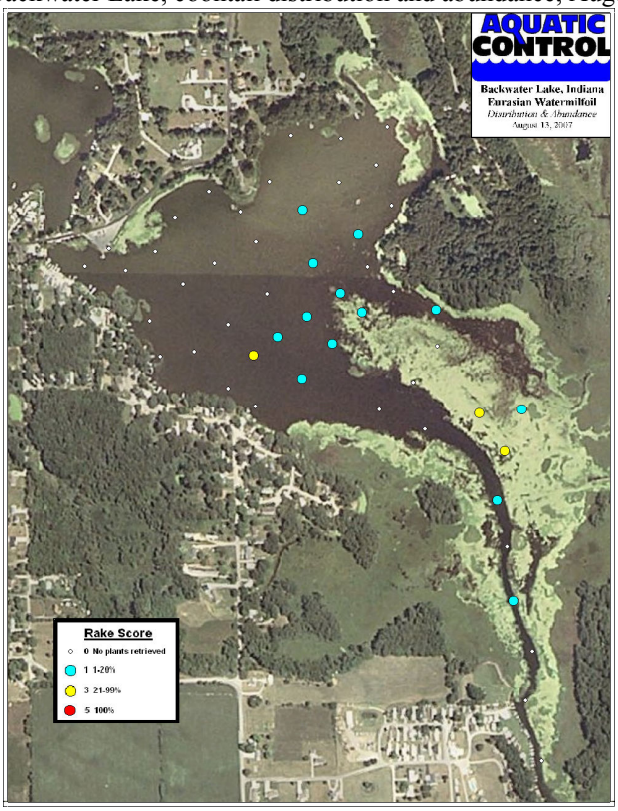

Figure 19. Backwater Lake, Eurasian watermilfoil distribution and abundance, August 13, 2007

2.3 Plant Sampling Discussion

Backwater Lake was sampled along with Webster Lake due to the fact the water flows through Backwater before it reaches Webster. This leads to the potential for the spread of invasive species from Backwater into Webster making monitoring and management of Backwater Lake a high priority for the WLCA. Despite the connection, these two lakes have unique ecosystems thus plant sampling data and sampling discussion are kept separate.

2.3.1 Webster Lake Sampling Discussion

Webster Lake has a history of nuisance conditions created by Eurasian watermilfoil. This fact is likely due to the large areas of shallow water that are perfect areas for milfoil colonization. A great deal of money has been spent on this lake in an effort to keep milfoil under control and milfoil control is one of the primary goals of the vegetation management plan. The April survey indicated a decrease in milfoil frequency when compared to the April 2005 and 2006 data. No treatment was completed before the May survey, so milfoil increased, but was still lower than May of 2005 and 2006. Invasive species mapping was completed in late May and found milfoil present in 40.4 acres of the lake. The May 2006 sampling found 108 acres of dense milfoil. Selective milfoil treatments were completed in early June, 2007. The final Tier II survey was completed in August and milfoil was found at only two sites (Figure 20). Overall, it appears that milfoil is declining in Webster Lake.

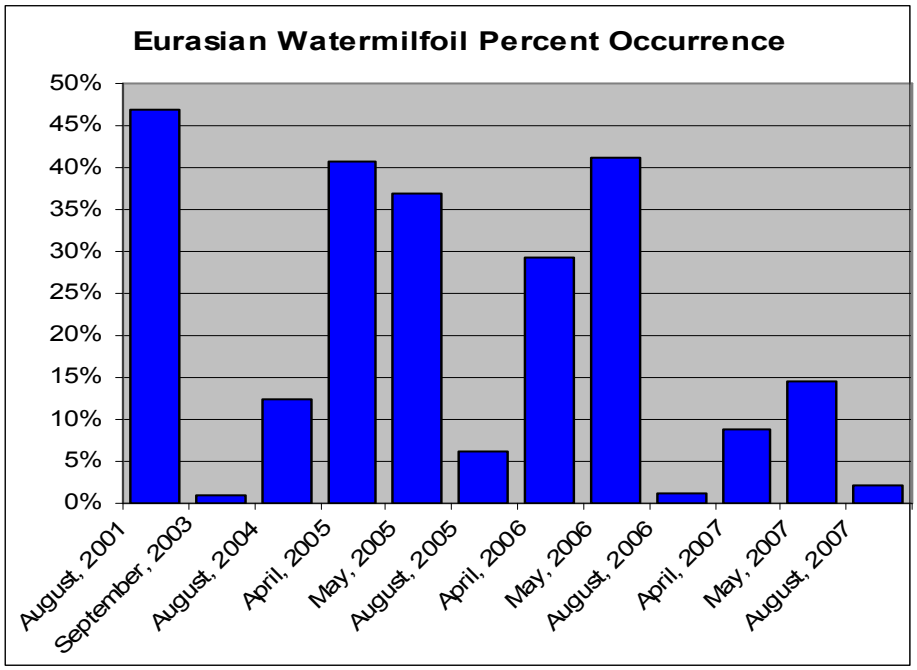

Figure 20. Webster Lake, Eurasian watermilfoil percent occurrence in the last 12 surveys.

Curlyleaf pondweed is also a target of invasive species controls in Webster Lake. An early season treatment was completed in 2006 to 104 acres of curlyeaf. This treatment was repeated again this season. It appears that these treatments are reducing curlyleaf pondweed abundance (Figure 21). Due to the presence of reproductive structures called

turions, this treatment will have to be completed for at least 1-2 more years in order to exhaust turion supplies.

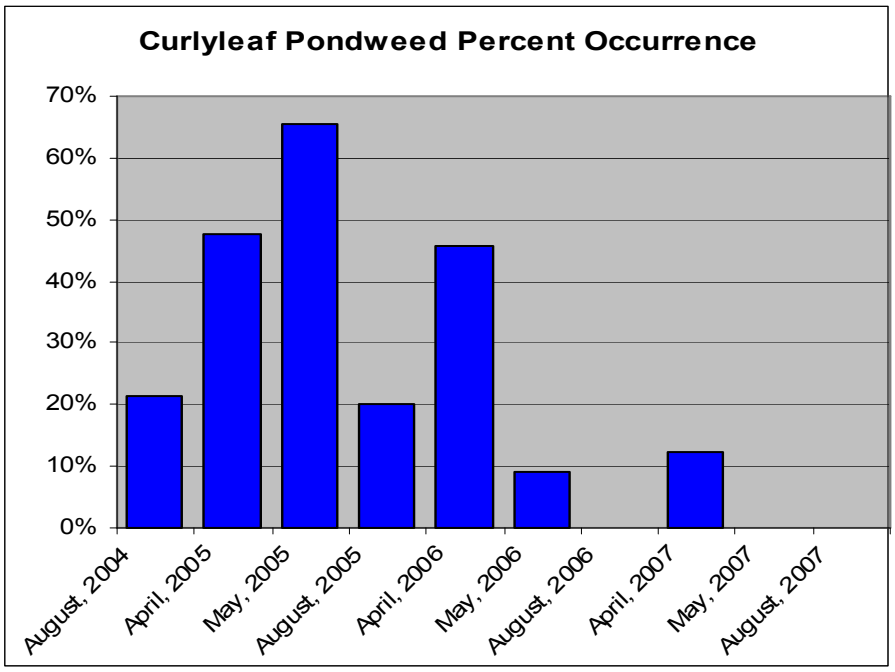

Figure 21. Webster Lake, curlyleaf pondweed percent occurrence in the last ten surveys.

The goal of the 2007 management actions was to decrease the abundance and density of nuisance exotic vegetation and maintain the abundance and density of native vegetation. Preserving the native vegetation is especially important in Webster Lake since it is one of the best lakes for muskellunge fishing in the state of Indiana. This season there was a slight decrease in the percentage of sample sites containing vegetation and the mean number of native species collected per site (Figure 22 & 23). The reason for the decrease is not clear, but the native population should be closely monitored in order to insure this is not the beginning of a negative trend.

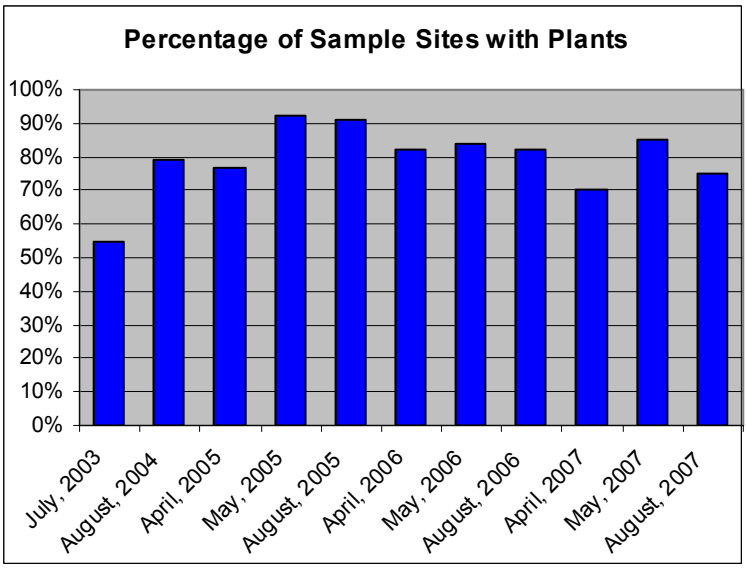

Figure 22. Webster Lake, comparison of the percentage of sample sites with plants in the last eleven surveys.

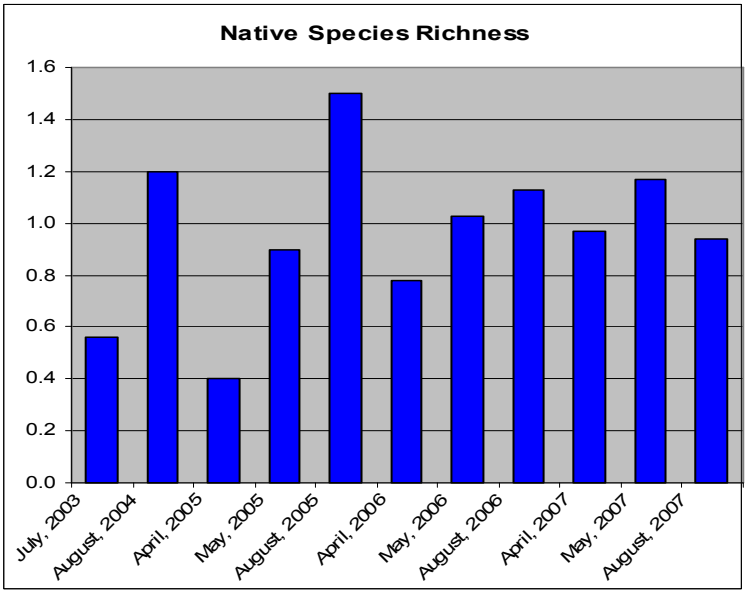

Figure 23. Webster Lake, comparison of number of native species collected per site in the last eleven surveys.

There is a great deal of historical data on individual species percent occurrence in Webster Lake (Table 7). We have focused on the decreases in curlyleaf pondweed and Eurasian watermilfoil, but it is also valuable to look at individual native species. The best time to sample for the majority of native species is in late summer. Slender naiad is the only species that has exhibited major changes in percent occurrence when comparing the past two summer surveys. Common coontail has increased in percent occurrence of the last several summers, but appeared to stabilize in this season's sampling.

Table 7. Webster Lake species percent occurrence since 2001.

Species	% of Survey Sites (8/01)*	% of Survey Sites (9/03)	% of Survey Sites (8/04)	% of Survey Sites (4/05)	% of Survey Sites (5/05)	% of Survey Sites (8/05)	% of Survey Sites (4/06)	% of Survey Sites (5/06)	% of Survey Sites (8/06)	% of Survey Sites (4/07)	% of Survey Sites (5/07)	% of Survey Sites (8/07)
Eurasian watermilfoil (*Myriophyllum spicatum*)	47.0%	1.0%	12.5%	40.6%	36.9%	6.3%	29.4%	40.9%	1.1%	8.9%	14.6%	2.2%
Curlyleaf pondweed (*Potamogeton crispus*)	17.0%	5.0%	21.3%	47.5%	65.6%	20.0%	45.6%	5.7%	0.0%	12.2%	0.0%	0.0%
Common Coontail (*Ceratophylum demersum*)		45.0%	36.9%	20.6%	41.9%	66.3%	38.1%	65.9%	71.1%	58.9%	76.4%	72.2%
Chara (*Chara spp.*)		1.0%	11.3%	10.6%	10.6%	13.8%	7.5%	6.8%	10.0%	6.7%	11.2%	7.8%
Elodea (*Elodea canidensis*)		0.0%	0.5%	0.6%	4.4%	0.6%	1.9%	6.8%	0.0%	0.0%	7.9%	0.0%
Northern watermilfoil (*Myriophylum sibiricum*)		1.0%	0.0%	0.0%	4.4%	5.0%	1.3%	1.1%	0.0%	0.0%	1.1%	0.0%
Variable watermilfoil (*Myriophylum heterophyllum*)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	0.0%	0.0%	0.0%
Slender naiad (*Najas flexilis*)		0.0%	22.5%	7.5%	8.8%	28.8%	28.1%	20.5%	23.3%	0.0%	7.9%	6.7%
Spiny naiad (*Najas marina*)		1.0%	1.9%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nitella (*Nitella spp.*)		0.0%	1.3%	0.0%	0.0%	0.6%	0.0%	1.1%	1.1%	0.0%	0.0%	0.0%
Largeleaf pondweed (*Potamogeton amplifolius*)	5.5%	0.0%	0.0%	0.0%	2.5%	3.1%	0.6%	0.0%	1.1%	0.0%	1.1%	0.0%
Illinois pondweed (*Potamogeton illinoensis*)		0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Small pondweed (*Potamogeton pusillus*)		0.0%	7.5%	0.0%	0.0%	3.1%	0.6%	1.1%	1.1%	0.0%	0.0%	0.0%
Leafy pondweed (*Potamogeton foliosus*)		1.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	1.1%	0.0%	0.0%	0.0%
Flatstem pondweed (*Potamogeton zosteriformis*)		5.0%	29.4%	0.6%	10.0%	9.4%	0.0%	0.0%	0.0%	1.1%	0.0%	1.1%
Sago pondweed (*Stuckenia pectinata*)		46.0%	3.8%	0.0%	1.9%	7.5%	0.0%	0.0%	2.2%	3.3%	9.0%	2.2%
Bladderwort (*Utricularia spp.*)		0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
Eel grass (*Vallisnaria americana*)		0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Horned pondweed (*Zannichellia palustris*)		0.0%	0.0%	0.0%	4.4%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	0.0%
Water stargrass (*Zosterella dubia*)		7.0%	5.6%	0.0%	0.6%	8.8%	0.0%	0.0%	1.1%	1.1%	0.0%	1.1%
*other species collected, but no individual frequency recorded												

2.3.2 Backwater Lake Sampling Discussion

Discussion of Backwater Lake is included in the "Webster Lake AVMP" due to the belief that Webster Lake's Eurasian watermilfoil infestation may originate in or above this lake. In 2006, Eurasian watermilfoil was not treated in Backwater Lake due to the lack of funds and abundance of milfoil in Webster. In 2007, an early season treatment using a combination of herbicides was completed on the lower 2/3 of Backwater Lake. This treatment targeted both curlyleaf pondweed and Eurasian watermilfoil. Prior to treatment a Tier II survey was completed and this indicated that milfoil had increased when compared to the April 2006 data. Treatment was completed two weeks after the survey. The May Tier II survey indicated that there was a decrease in the percent occurrence of milfoil. There was not a complete kill of milfoil within the treatment area, but a significant reduction. August sampling indicated that milfoil had spread in Backwater Lake, but was still well below August, 2006 levels (Figure 24).

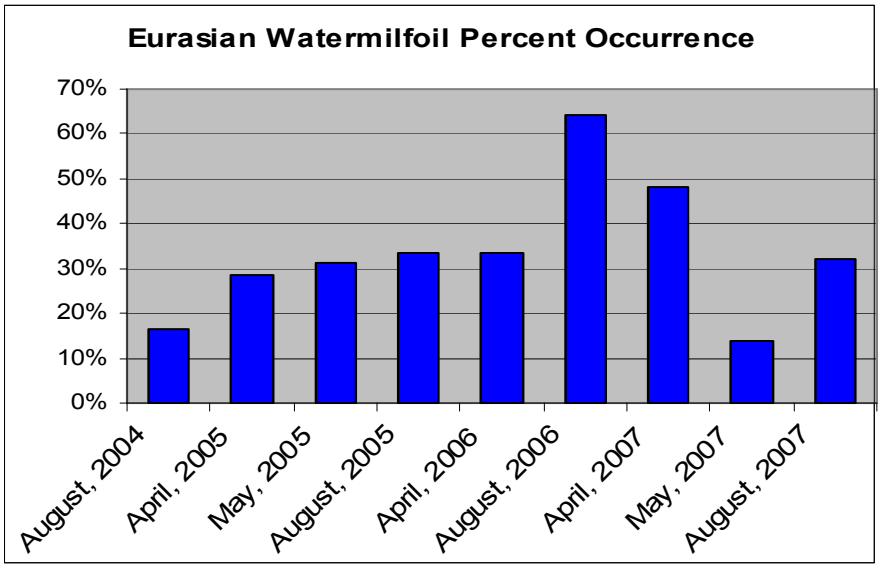

Figure 24. Backwater Lake, Eurasian watermilfoil percent occurrence in the last nine surveys.

Curlyleaf pondweed was included in the early season combination treatment completed in late April. This treatment effectively controlled curlyleaf within the treatment area, but some curlyleaf remained above the treatment zone. Figure 25 illustrates frequency of occurrence of curlyleaf pondweed over the past nine surveys. It will be important to continue the early season treatments for at least two more seasons in order to exhaust turion supplies. In addition, it will also be important to continue to monitor the curlyleaf population with similar surveys for the next several seasons in order to assess long-term benefits of the control program.

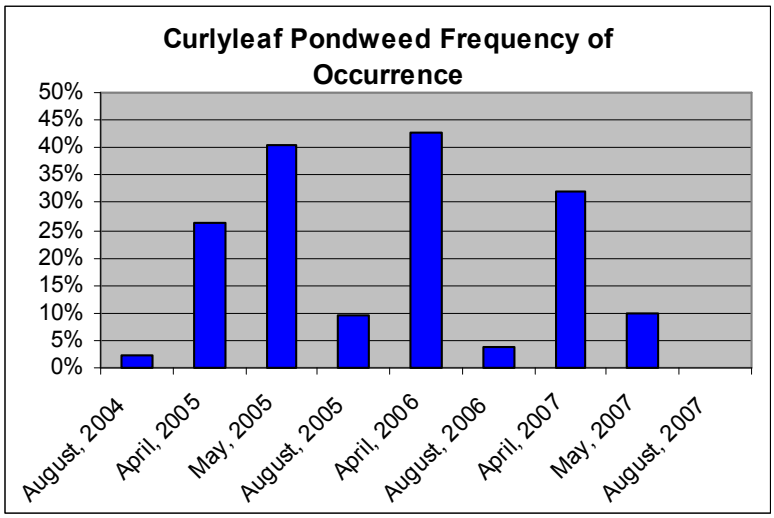

Figure 25. Backwater Lake, curlyleaf pondweed percent occurrence in the last nine surveys.

Backwater Lake has abundant native submersed vegetation as illustrated in Figure 26. There appears to be little change in the abundance of native submersed vegetation over the last several seasons. The population is dominated by common coontail which may be limiting the overall diversity of submersed vegetation.

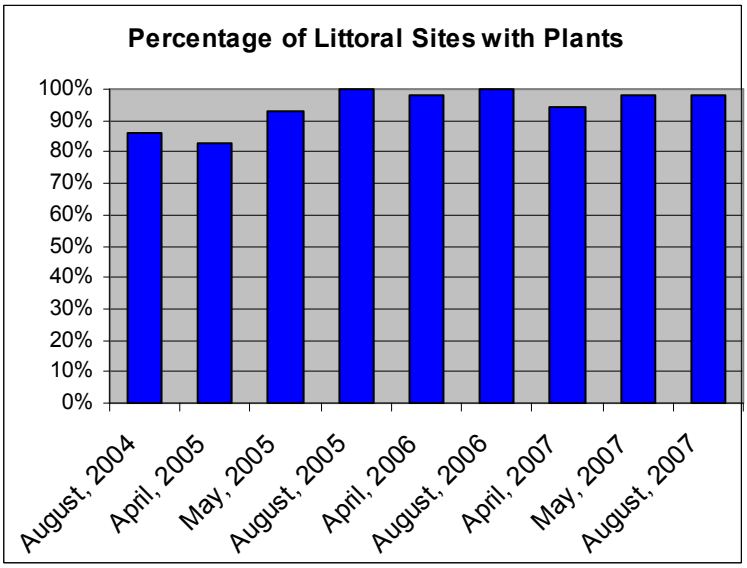

Figure 26. Backwater Lake percentage of sample sites with plants in the last nine surveys.

3.0 2007 VEGETATION CONTROL

In general, the goals of the vegetation management plan are to control nuisance aquatic species, with a focus on exotic nuisance plants, while preserving and enhancing native vegetation. On Webster Lake an early season curlyleaf treatment was completed on April 24, a selective milfoil treatment was completed on June 12, and a shoreline treatment for the control of nuisance native vegetation was completed on June 13. Backwater Lake

received a treatment on April 24 for control of curlyleaf pondweed and Eurasian watermilfoil and a shoreline treatment on June 13 primarily for control of coontail.

3.1 Webster Lake Vegetation Control

On April 24, 2007, WLCA funded treatment of 125 acres of curlyleaf pondweed on Webster Lake (Figure 27). This treatment was completed using Aquathol K (active ingredient endothal) at a rate of 1.0 ppm. Aquatic application boats fitted with dropper hoses were used to apply the product. Areas designated for treatment were downloaded onto GPS devices in order to insure accurate application.

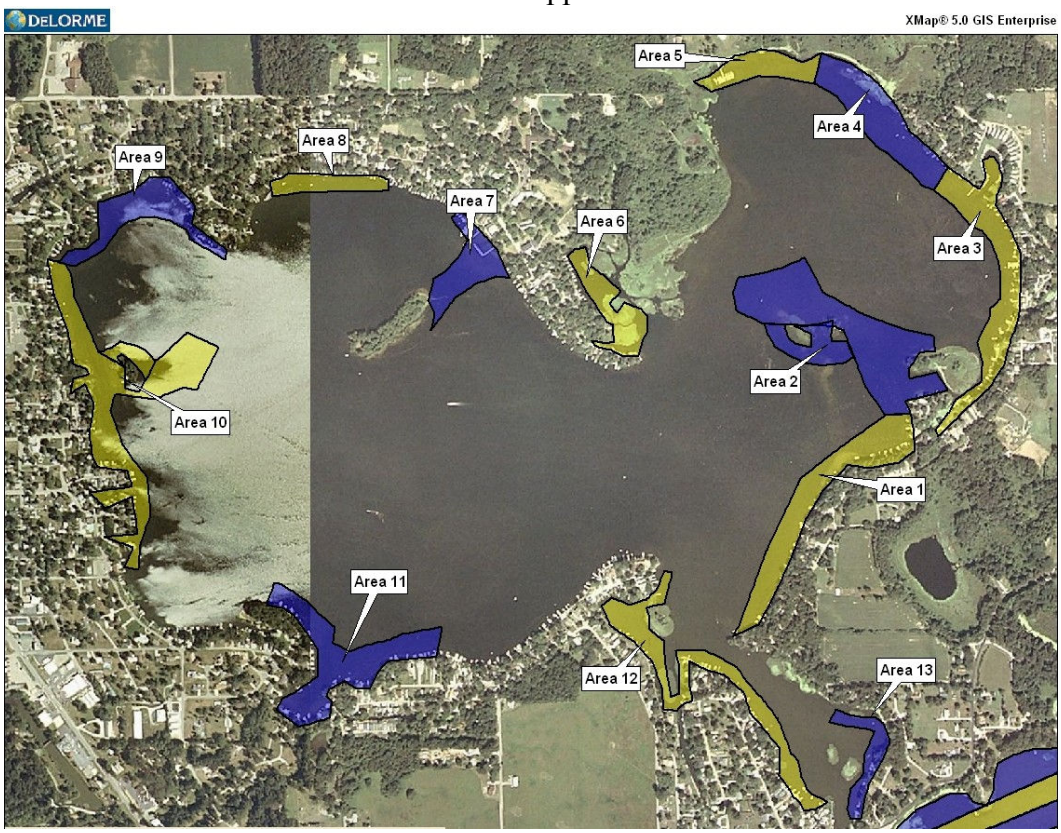

Figure 27. Webster Lake curlyleaf pondweed treatment areas, April 24, 2007.

This treatment was completed early in the season for two reasons. The first reason was to control curlyleaf pondweed before it produced reproductive structures. The second reason is that there are very few native species present early in the season, so native damage would be minimized. The treatment was very successful at reducing the abundance of curlyleaf pondweed in 2007. One or two more seasons of treatment may be sufficient in order to achieve significant long-term reductions in curlyleaf pondweed (turions can last for several years in the lake bottom and are not controlled with herbicide treatments, so control of the plants before they produce turions will eventually exhaust the turion supply).

On June 12, 2007, 40.4 acres of Eurasian watermilfoil was treated on Webster Lake (Figure 28). This treatment was funded by LARE and WLCA. Renovate 3 (active ingredient triclopyr) was used in the application at a rate of 1.25-1.50 ppm. These areas

were mapped during the Invasive Species Mapping Survey and downloaded onto GPS units that were used during the application to insure proper product placement. Sampling data appears to indicate that the treatment effectively controlled Eurasian watermilfoil in Webster Lake.

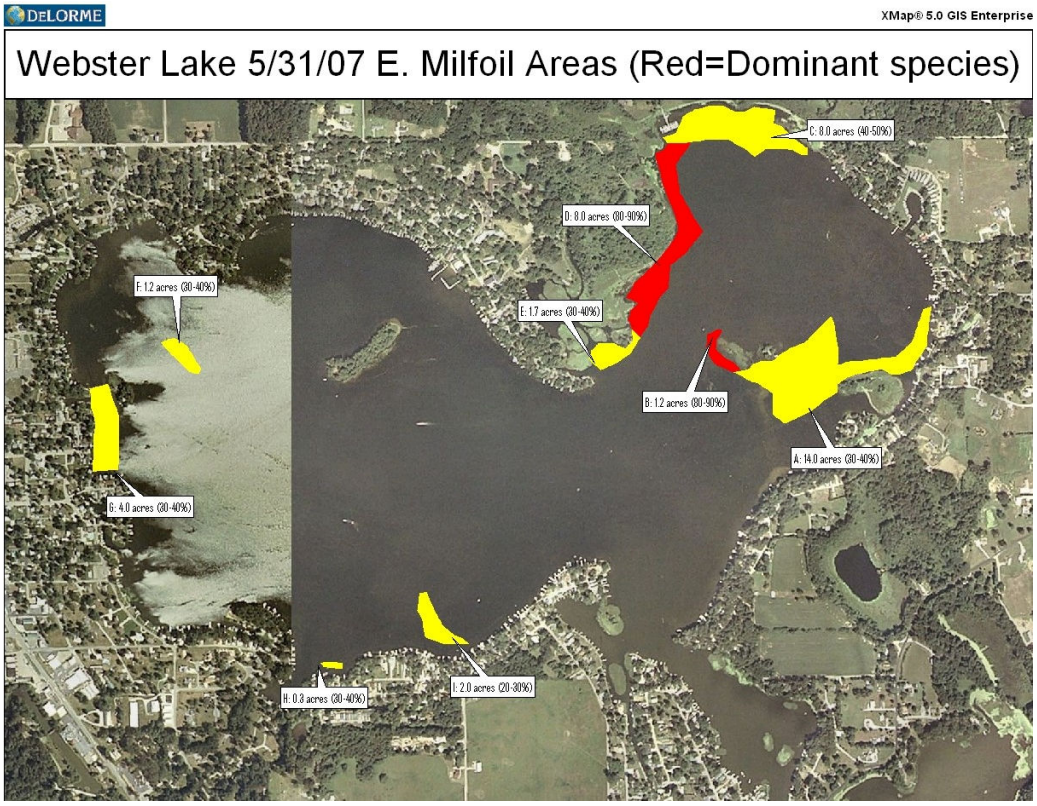

Figure 28. Webster Lake, Eurasian watermilfoil treatment areas, June 12, 2007.

A shoreline treatment was completed to Webster Lake on June 13, 2007. This treatment was designed to reduce nuisance conditions in high-use areas. The primary species targeted with this treatment was common coontail. A combination of Reward (active ingredient diquat) and Komeen (active ingredient copper) were used in the treatment. A total of 38.25 acres was treated in Webster Lake (Figure 29). The treatment was funded by WLCA. The shoreline treatments were very effective at reducing nuisance conditions in lake.

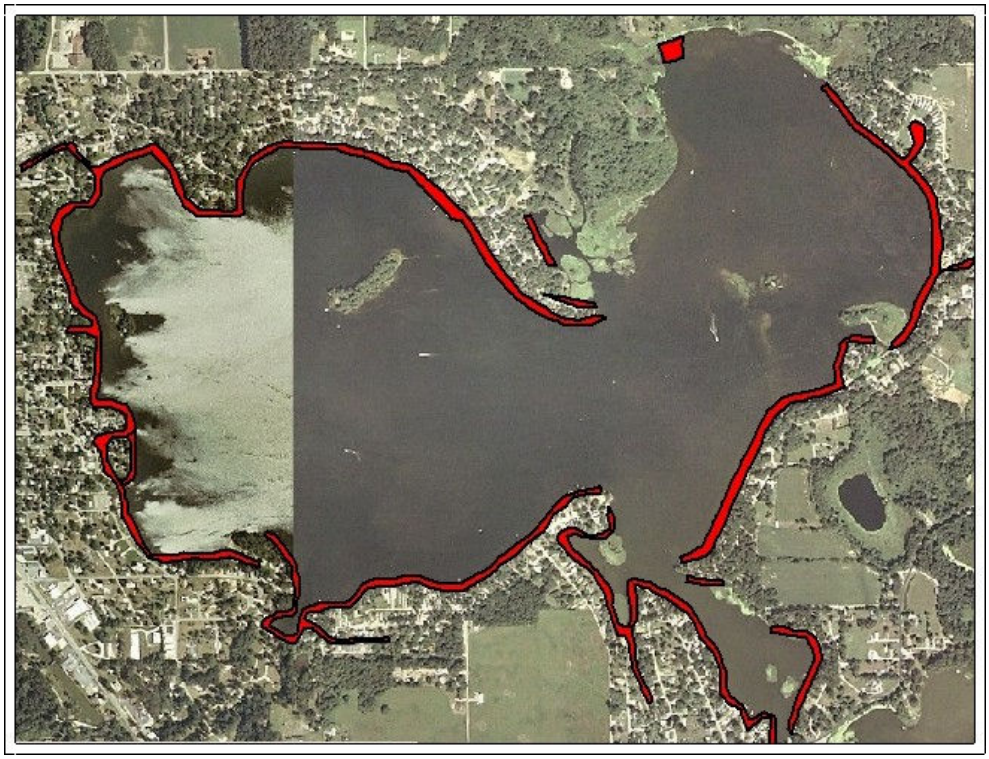

Figure 29. Webster Lake shoreline treatment areas, June 13, 2007.

3.2 Backwater Lake Vegetation Control

On April 24, 2007, 75 acres of curlyleaf pondweed and Eurasian watermilfoil was treated on Backwater Lake. This was basically the lower 2/3 of the lake where these species were most abundant, close to Webster Lake, and interfering with lake use (Figure 30). The treatment was funded by WLCA. Aquathol K at a rate of 1.0 ppm was used in combination with 0.5 ppm of DMA 4 (active ingredient: 2,4-D). This treatment was completed with an airboat fitted with a high pressure pump system and dropper hoses. A GPS device was used in order to achieve accuracy in herbicide concentrations. The treatment significantly reduced the abundance of both species as illustrated in the previously discussed plant sampling data and in Figure 31.

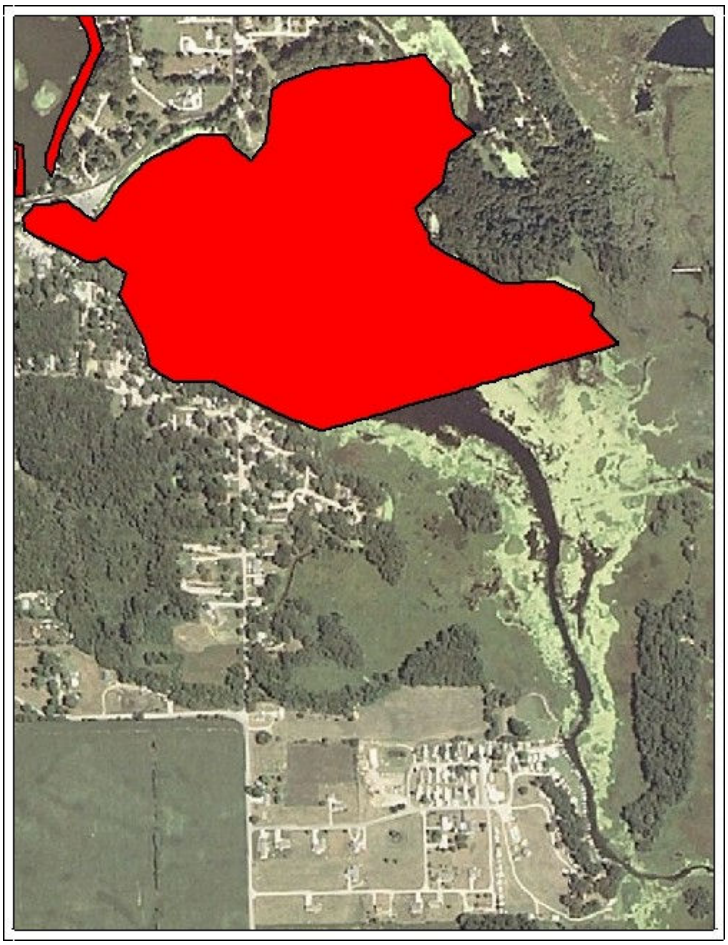

Figure 30. Backwater Lake, curlyleaf pondweed and Eurasian watermilfoil treatment areas, April 24,2007

Figure 31. Photos taken from same area of Backwater Lake on August 3, 2006 (top) and July 26, 2007 (bottom).

Backwater Lake also received some shoreline treatment for control of nuisance vegetation and algae. A total of 4.4 acres was treated on June 13, 2007 (Figure 32). Reward, Komeen, and Aquathol were used in the application. Coontail and filamentous algae were the primary targets of the treatment. The treatment was funded by individual groups of lot owners that live on Backwater Lake.

Figure 32. Backwater Lake shoreline treatment areas, June 13, 2007.

4.0 ACTION PLAN AND BUDGET UPDATE

Eurasian watermilfoil has historically been the primary nuisance exotic species in Webster Lake. Selective treatments with Renovate herbicide appear to be significantly reducing this population. This season's treatments combined with the reduction in milfoil abundance in Backwater Lake should result in less milfoil in 2008. However, it is important to remain vigilant and continue treating any remaining milfoil beds. It is impossible to predict the number of acres that will require treatment next season, but much like this year, it will probably be fewer acres. Based upon the previous budget estimate, it was recommended to request $25,000 from LARE for control of Eurasian watermilfoil. That amount would treat approximately 57 acres of milfoil at a price of

$435/acre. This should be a sufficient amount for treatment of milfoil in Webster Lake in 2008.

Since the last whole lake fluridone treatment, curlyleaf pondweed has become more of a nuisance in the spring and early summer than Eurasian watermilfoil. The early season curlyleaf treatments have been very effective at reducing nuisance conditions and it appears we are already seeing some long term control of this species. In order to exhaust the turion supply it is recommended that at least one more season of treatment be completed. It is recommended the same 125 acres be treated in 2008. Treatment should be completed with 1.0 ppm of Aquathol K herbicide once surface temperatures reach 50 degrees F. The maximum cost of this treatment would be $37,500. We recommend that the WLCA request $37,500 from LARE for treatment of curlyleaf pondweed in Webster Lake.

It will also be necessary to complete shoreline contact herbicide treatments in order to relieve residents of nuisance conditions caused by native vegetation. These treatments should not extend beyond 100 feet from the shoreline and should include only the areas treated this past season. Treatments should be completed in mid to late June much like they were in 2007. These treatments will need to be funded by WLCA.

This was the first season that Backwater Lake was treated for early season control of curlyleaf pondweed. The 2007 treatment also included 2,4-D at a rate of 0.5 ppm for milfoil control. The treatment significantly reduced both species, but some milfoil remained in the treatment area and curlyleaf was still present above the treatment area. It is recommended that this treatment be completed again in 2008. It would be interesting to use Renovate at the same rate in place of 2,4-D in an effort to potentially obtain better results on the milfoil, but this would increase the cost of treatment. We are currently working with the Renovate manufacturer to see if they are willing to help out on this treatment in order to keep costs down. We recommend continuing with this treatment next season and potentially changing from 2,4-D to Renovate. The cost of this treatment would be no more than $25,500 for treatment of 75 acres. This treatment should be continued for at least two more seasons.

Along with herbicide applications, it will be important to continue monitoring the vegetation in a similar fashion. Three Tier II surveys should be sufficient to keep track of any major changes in the plant population and make appropriate management decisions. These surveys should be completed near the same time as they were in 2007. Invasive mapping surveys should also be completed prior to the milfoil treatments.

A budget for the proposed applications and sampling is provided in Table 7. The budget includes the estimated cost of treatments that should be eligible for funding by LARE and cost for treatments funded solely by the WLCA. The budget extends for the next four seasons. **It is recommended that WLCA requests $25,500 for a combination treatment of up to 75 acres curlyleaf pondweed and Eurasian watermilfoil in Backwater Lake, $37,500 for treatment of up to 125 acres of curlyleaf pondweed in**

Webster Lake, $25,000 for treatment of up to 57 acres of milfoil in Webster Lake, and $6,000 for plant sampling and plan updates on both lakes.

Table 8. Webster Lake budget estimate for the next four seasons.

	2008	2009	2010	2011
Early season curlyleaf pondweed treatment (125 acres)	$37,500	-	-	-
Renovate treatment for selective milfoil control (57 acres)	$25,000	$20,000	$15,000	$10,000
Developed shoreline treatment (including algae not to exceed 80 acres)	$15,000	$15,500	$16,000	16,500
Combination Curlyleaf and milfoil treatment on Backwater Lake (75 acres)	$25,000	$25,000	-	-
Plant Sampling and plan update	$6,000	$6,000	$6,000	$6,000
Total LARE Funding Request:	**$93,500**	**$51,000**	**$21,000**	**$16,000**
Total Funded Strictly by Association if LARE funds milfoil and curlyleaf treatments (does not include 10% match):	$15,000	$15,500	$16,000	$16,500

5.0 PUBLIC INVOLVEMENT

A public meeting was held at the Webster Lake Community Center on September 26, 2007. The meeting was designed to educate lake users on the benefits of aquatic vegetation, 2007 vegetation controls, and the future of aquatic plant management on Webster Lake. The meeting was advertised in three different local newspapers (Figure 33). The meeting was also used to gain input from lake users concerning their perceptions of aquatic vegetation and satisfaction or dissatisfaction concerning vegetation control techniques. Thirteen individuals were in attendance and filled out a lake use survey. The results of the survey are listed in Table 9.

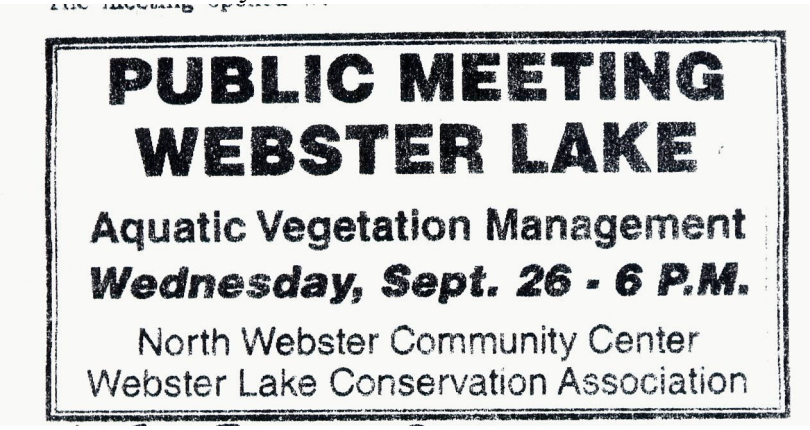

Figure 33. Notice which appeared in "The Paper", "Mail Journal", and "Times Union" Newspapers.

Table 9. Webster Lake Public Meeting Survey Results, September 26, 2007.

Webster Lake User Survey 9/26/07		
Are you a lake property owner?	Yes: 100%	No: 0%
Are you currently a member of your lake association?	Yes: 100%	No: 0%
How many years have you been at the lake?	2 or Less: 15%	5 to 10: 31%
	2 to 5: 0%	Over 10: 54%
How do you use the lake (mark all that apply)	85% Swimming	46% Irrigation
	85% Boating	0% Drinking water
	46% Fishing	0% Other _____
Do you have aquatic plants at your shoreline in nuisance quantities?	Yes: 69% No: 31%	
Does aquatic vegetation interfere with your use or enjoyment of the lake?	Yes: 69% No: 31%	
Does the level of vegetation in the lake affect your property values?	Yes: 85% No: 15%	
Are you in favor of continuing efforts to control vegetation on the lake?	Yes: 100% No: 0%	
Are you aware that the LARE funds will only apply to work controlling invasive exotic species, and more work may need to be privately funded?	Yes: 100% No: 0%	
Were you satisfied with the results of the LARE funded invasive treatments this season?	Yes: 77% No: 0% No Response: 23%	
Mark any of these you think are problems on your lake:		
31% Too many boats access the lake		
38% Use of jet skis on the lake		
31% Too much fishing		
8% Fish population problem		
46% Dredging needed		
38% Overuse by nonresidents		
54% Too many aquatic plants		
0% Not enough aquatic plants		
0% Poor water quality		
23% Pier/funneling problem		

As Table 9 indicates, all of those present were property owners and members of the lake association. Swimming and boating were the most popular activities on the lake. It also appeared that the majority of respondents were pleased with the LARE funded treatments and wished to continue with vegetation control efforts on the lake.

Another topic discussed at the public meeting was the discovery of hydrilla (*Hydrilla verticillata*) in Lake Manitou. Hydrilla is an invasive aquatic species that was originally discovered in Florida in the 1960's. There are many characteristics of hydrilla that make it a threat to Indiana waterways. This species can grow in lower light conditions than most native species, grows faster than most native species, and can shade out other species by forming a surface canopy. Hydrilla can be easily confused with native elodea. The best way to distinguish hydrilla from native elodea is that hydrilla typically has five leaves along each whorl along with visible serrated edges along the leaf margin (Figure 34). What makes controlling the spread of hydrilla difficult is the fact that it can be spread by fragments. **That is why it is vitally important that lake users remove all plants and sediment from their boats when entering and leaving Webster Lake.** More information about controlling the spread of hydrilla can be found at www.protectyourwaters.net.

Figure 34. Illustration of hydrilla on the left compared to native elodea on the right. Hydrilla typically contains five toothed leaves per whorl while native elodea typically has three leaves per whorl and the teeth are not visible on the leaves (Illustrations provided by Applied Biochemist).

It will be important for the Association to continue to inform users of proper land management practices that have minimal negative impacts on the lakes water quality.

This may include discouraging fertilizer use, not disposing of yard waste in or near the lake, and allowing natural vegetation to grow along the shoreline as opposed to concrete seawalls. Residents should also continue to be informed of the benefits of native vegetation on fish populations and water quality. These items can be reinforced in Association newsletters, websites, and at Association meetings.

6.0 APPENDIX UPDATE

6.1 2007 Plant Sampling Data

Webster Lake

Lake	Date	Latitude	Longitude	Site	Depth	RAKE	Eurasian watermilfoil (*Myriophyllum spicatum*)	curlyleaf pondweed (*Potamogeton crispus*)	common coontail (*Ceratophyllum demersum*)	Chara (Chara spp.)	Slender naiad (*Najas flexilis*)	sago pondweed (*Potamogeton pectinatus*)	flatstemmed pondweed (*Potamogeton zosteriformis*)	water stargrass (*Zosterella dubia*)
							MYSP2	POCR3	CEDE4	CH?AR	NAFL	POPE6	POZO	ZODU
Webster	4/3/07	41.317359	-85.670945	1	4.0	1	1		1					
Webster	4/3/07	41.318455	-85.670643	2	4.0	1			1					
Webster	4/3/07	41.31992	-85.673179	3	5.0									
Webster	4/3/07	41.321401	-85.675048	4	6.0									
Webster	4/3/07	41.325357	-85.674072	5	7.0									
Webster	4/3/07	41.323508	-85.67285	6	5.0	1			1	1				
Webster	4/3/07	41.326136	-85.671464	7	6.0	1					1			
Webster	4/3/07	41.326704	-85.669602	8	7.0	1			1		1			
Webster	4/3/07	41.327683	-85.672293	9	4.0	5	1	1	3		1			
Webster	4/3/07	41.3294	-85.672979	10	7.0	1		1						
Webster	4/3/07	41.329683	-85.672418	11	8.0	1			1					
Webster	4/3/07	41.329013	-85.669569	12	6.0	1			1					
Webster	4/3/07	41.328321	-85.666835	13	5.0	1			1					
Webster	4/3/07	41.3295	-85.666786	14	16.0	1			1					
Webster	4/3/07	41.330249	-85.667351	15	7.0	1			1					
Webster	4/3/07	41.330688	-85.668854	16	16.0	3			3					
Webster	4/3/07	41.331069	-85.669532	17	13.0	3		1	3		1			
Webster	4/3/07	41.332496	-85.66903	18	5.0									
Webster	4/3/07	41.333577	-85.670624	19	4.0	1			1					
Webster	4/3/07	41.33295	-85.671927	20	17.0	5			5					
Webster	4/3/07	41.332968	-85.674282	21	14.0	1			1					
Webster	4/3/07	41.331669	-85.674096	22	14.0									
Webster	4/3/07	41.331006	-85.673613	23	14.0	5			5					
Webster	4/3/07	41.329568	-85.674031	24	7.0									
Webster	4/3/07	41.328322	-85.674686	25	7.0	1			1					
Webster	4/3/07	41.329059	-85.678036	26	4.0									
Webster	4/3/07	41.326983	-85.676679	27	8.0	1			1					
Webster	4/3/07	41.326454	-85.677307	28	12.0	3			3					
Webster	4/3/07	41.326361	-85.678555	29	18.0									
Webster	4/3/07	41.32734	-85.679333	30	7.0	1			1					
Webster	4/3/07	41.327977	-85.680055	31	7.0									
Webster	4/3/07	41.327309	-85.682116	32	10.0	1			1					
Webster	4/3/07	41.326113	-85.681631	33	14.0									
Webster	4/3/07	41.327525	-85.68401	34	9.0	1					1			
Webster	4/3/07	41.329149	-85.682703	35	7.0	1			1					
Webster	4/3/07	41.330574	-85.683019	36	6.0	1			1					
Webster	4/3/07	41.329494	-85.684398	37	12.0	1			1					
Webster	4/3/07	41.328747	-85.685292	38	9.0	3			3					
Webster	4/3/07	41.331117	-85.684349	39	8.0	3			3					
Webster	4/3/07	41.331593	-85.686224	40	5.0	1			1					
Webster	4/3/07	41.331005	-85.687603	41	11.0	1			1					
Webster	4/3/07	41.330219	-85.689217	42	6.0	1			1					
Webster	4/3/07	41.329141	-85.688596	43	16.0									
Webster	4/3/07	41.328216	-85.688743	44	10.0	1			1				1	
Webster	4/3/07	41.327519	-85.689126	45	9.0	1			1		1			
Webster	4/3/07	41.328614	-85.690066	46	9.0	3			3					
Webster	4/3/07	41.330131	-85.690784	47	10.0	1			1					
Webster	4/3/07	41.329719	-85.691777	48	6.0									
Webster	4/3/07	41.32749	-85.69173	49	6.0	1		1	1					
Webster	4/3/07	41.326757	-85.690941	50	6.0	3		1	1					
Webster	4/3/07	41.32603	-85.689658	51	20.0									
Webster	4/3/07	41.325896	-85.688936	52	15.0									
Webster	4/3/07	41.327568	-85.690536	53	6.0	3		3						
Webster	4/3/07	41.329756	-85.693893	54	12.0									
Webster	4/3/07	41.329332	-85.695066	55	6.0	5			1	5		1		
Webster	4/3/07	41.328191	-85.694686	56	5.0	1	1	1		1				
Webster	4/3/07	41.326816	-85.693824	57	5.0	5			1	5		1		
Webster	4/3/07	41.325605	-85.693876	58	4.0	3			1	1	1	1		
Webster	4/3/07	41.325617	-85.691829	59	8.0	3			3					
Webster	4/3/07	41.325126	-85.691549	60	18.0									
Webster	4/3/07	41.324534	-85.692644	61	5.0									
Webster	4/3/07	41.323414	-85.692692	62	5.0									
Webster	4/3/07	41.32332	-85.691083	63	7.0	1			1					
Webster	4/3/07	41.323485	-85.689692	64	13.0									
Webster	4/3/07	41.322601	-85.691185	65	5.0									
Webster	4/3/07	41.321767	-85.691626	66	4.0									
Webster	4/3/07	41.321697	-85.690295	67	4.0	1								
Webster	4/3/07	41.323347	-85.687809	68	8.0	1			1					
Webster	4/3/07	41.32417	-85.686481	69	10.0	5			5					
Webster	4/3/07	41.323253	-85.686702	70	7.0	1	1		1					
Webster	4/3/07	41.321644	-85.686944	71	7.0	1		1			1			
Webster	4/3/07	41.319934	-85.687498	72	6.0	1		1		1				1
Webster	4/3/07	41.320415	-85.686183	73	6.0	3	1	1			1			
Webster	4/3/07	41.321318	-85.685042	74	12.0	5			5					
Webster	4/3/07	41.322171	-85.684356	75	6.0	1			1					
Webster	4/3/07	41.322105	-85.683258	76	7.0	5	1		3		1			
Webster	4/3/07	41.32106	-85.683081	77	8.0	1	1				1			
Webster	4/3/07	41.320762	-85.68165	78	6.0	1			1					
Webster	4/3/07	41.321372	-85.681125	79	18.0									
Webster	4/3/07	41.321666	-85.679908	80	6.0									
Webster	4/3/07	41.322163	-85.679844	81	14.0									
Webster	4/3/07	41.322867	-85.678588	82	7.0	1		1	1					
Webster	4/3/07	41.323632	-85.677928	83	17.0									
Webster	4/3/07	41.323143	-85.677106	84	6.0	1			1					
Webster	4/3/07	41.323565	-85.675299	85	7.0	1			1					
Webster	4/3/07	41.322657	-85.675355	86	6.0									
Webster	4/3/07	41.32139	-85.677314	87	3.0	3			3					
Webster	4/3/07	41.320744	-85.676896	88	3.0	1			1					
Webster	4/3/07	41.320372	-85.674631	89	3.0	3	3				3			
Webster	4/3/07	41.318903	-85.673059	90	4.0	1			1					

Lake	Date	Latitude	Longitude	Design	Site	Depth	RAKE	CACA	EGDE	HYVE	MYAQ	MYSP2	CEDE4
Webster	5.30.07	41.317359	-85.670945		1	3.0	1						1
Webster	5.30.07	41.318455	-85.670643		2	4.0	5						5
Webster	5.30.07	41.31992	-85.673179		3	4.0	1						1
Webster	5.30.07	41.321401	-85.675048		4	6.0	1						1
Webster	5.30.07	41.325357	-85.674072		5	8.0	1						1
Webster	5.30.07	41.323508	-85.67285		6	5.0							
Webster	5.30.07	41.326136	-85.671464		7	5.0	3					1	1
Webster	5.30.07	41.326704	-85.669602		8	7.0	3						3
Webster	5.30.07	41.327683	-85.672293		9	4.0	3						
Webster	5.30.07	41.3294	-85.672979		10	7.0	5						5
Webster	5.30.07	41.329683	-85.672418		11	12.0	3						3
Webster	5.30.07	41.329013	-85.669569		12	7.0	5						5
Webster	5.30.07	41.328321	-85.666835		13	5.0	3					1	3
Webster	5.30.07	41.3295	-85.666786		14	14.0							
Webster	5.30.07	41.330249	-85.667351		15	7.0							
Webster	5.30.07	41.330688	-85.668854		16	16.0	1						1
Webster	5.30.07	41.331069	-85.669532		17	11.0	5						5
Webster	5.30.07	41.332496	-85.66903		18	4.0	3						3
Webster	5.30.07	41.333577	-85.670624		19	4.0	1						1
Webster	5.30.07	41.33295	-85.671927		20	13.0	3						3
Webster	5.30.07	41.332968	-85.674282		21	12.0	5						5
Webster	5.30.07	41.331669	-85.674096		22	12.0	5					1	5
Webster	5.30.07	41.331006	-85.673613		23	7.0	5					3	5
Webster	5.30.07	41.329568	-85.674031		24	6.0	1						1
Webster	5.30.07	41.328322	-85.674686		25	7.0	3					1	1
Webster	5.30.07	41.329059	-85.678036		26	4.0	3					1	1
Webster	5.30.07	41.326983	-85.676679		27	7.0	1						1
Webster	5.30.07	41.326454	-85.677307		28	9.0	5						5
Webster	5.30.07	41.326361	-85.678555		29	11.0	3						3
Webster	5.30.07	41.32734	-85.679333		30	7.0	5						1
Webster	5.30.07	41.327977	-85.680055		31	5.0	3						1
Webster	5.30.07	41.327309	-85.682116		32	9.0	5						5
Webster	5.30.07	41.326113	-85.681631		33	12.0							
Webster	5.30.07	41.327525	-85.68401		34	7.0	5						5
Webster	5.30.07	41.329149	-85.682703		35	6.0	1						1
Webster	5.30.07	41.330574	-85.683019		36	5.0	3						3
Webster	5.30.07	41.329494	-85.684398		37	18.0							
Webster	5.30.07	41.328747	-85.685292		38	11.0	5						5
Webster	5.30.07	41.331117	-85.684349		39	6.0	3						3
Webster	5.30.07	41.331593	-85.686224		40	5.0	3						3
Webster	5.30.07	41.331005	-85.687603		41	8.0	5						5
Webster	5.30.07	41.330219	-85.689217		42	5.0	5						5
Webster	5.30.07	41.329141	-85.688596		43	14.0	1						1
Webster	5.30.07	41.328216	-85.688743		44	9.0	5						5
Webster	5.30.07	41.327519	-05.689126		45	9.0	5						5
Webster	5.30.07	41.328614	-85.690066		46	8.0	5						5
Webster	5.30.07	41.330131	-85.690784		47	4.0	1						1
Webster	5.30.07	41.329719	-85.691777		48	6.0							
Webster	5.30.07	41.32749	-85.69173		49	7.0	3					1	1
Webster	5.30.07	41.326757	-85.690941		50	6.0	5						1
Webster	5.30.07	41.32603	-85.689658		51	16.0	1						1
Webster	5.30.07	41.325896	-85.688936		52	11.0	3						3
Webster	5.30.07	41.327568	-85.690536		53	7.0	3					3	1
Webster	5.30.07	41.329756	-85.693893		54	16.0	5						5
Webster	5.30.07	41.329332	-85.695066		55	4.0	3						
Webster	5.30.07	41.328191	-85.694686		56	5.0							
Webster	5.30.07	41.326816	-85.693824		57	5.0	3						
Webster	5.30.07	41.325605	-85.693876		58	4.0	5					1	1
Webster	5.30.07	41.325617	-85.691829		59	7.0	3						3
Webster	5.30.07	41.325126	-85.691549		60	19.0							
Webster	5.30.07	41.324534	-85.692644		61	4.0							
Webster	5.30.07	41.323414	-85.692692		62	3.0	5						
Webster	5.30.07	41.32332	-85.691083		63	8.0	5						5
Webster	5.30.07	41.323485	-85.689692		64	16.0							
Webster	5.30.07	41.322601	-85.691185		65	5.0	3						3
Webster	5.30.07	41.321767	-85.691626		66	4.0	1						
Webster	5.30.07	41.321697	-85.690295		67	4.0	1						
Webster	5.30.07	41.323347	-85.687809		68	8.0	3						1
Webster	5.30.07	41.32417	-85.686481		69	8.0	3						3
Webster	5.30.07	41.323253	-85.686702		70	7.0	3						3
Webster	5.30.07	41.321644	-85.686944		71	7.0	5						3
Webster	5.30.07	41.319934	-85.687498		72	5.0	5						
Webster	5.30.07	41.320415	-85.686183		73	6.0	5					1	5
Webster	5.30.07	41.321318	-85.685042		74	17.0							
Webster	5.30.07	41.322171	-85.684356		75	7.0	5						5
Webster	5.30.07	41.322105	-85.683258		76	7.0	5					5	5
Webster	5.30.07	41.32106	-85.683081		77	7.0	5					1	5
Webster	5.30.07	41.320762	-85.68165		78	7.0	5					5	3
Webster	5.30.07	41.321372	-85.681125		79	13.0	5						5
Webster	5.30.07	41.321666	-85.679908		80	9.0	3						3
Webster	5.30.07	41.322163	-85.679844		81	17.0	1						1
Webster	5.30.07	41.322867	-85.678588		82	7.0	3						3
Webster	5.30.07	41.323632	-85.677928		83	16.0							
Webster	5.30.07	41.323143	-85.677106		84	7.0							
Webster	5.30.07	41.323565	-85.675299		85	8.0	1						1
Webster	5.30.07	41.322657	-85.675355		86	6.0	1						1
Webster	5.30.07	41.32139	-85.677314		87	3.0	1						1
Webster	5.30.07	41.320744	-85.676896		88	3.0	3						3
Webster	5.30.07	41.320372	-85.674631		89	2.0	1						
Webster	5.30.07	41.318903	-85.673059		90	5.0	1						1

Lake	Date	Latitude	Longitude	Design	Site	Depth	RAKE	MYSP2	CEDE4	CH?AR	NAFL	POPE6	POZO	ZODU	UTMA	UNKN
Webster	8/13/07	41.317359	-85.670945		1	5.0	0									
Webster	8/13/07	41.318455	-85.670643		2	5.0	5		5	3						
Webster	8/13/07	41.31992	-85.673179		3	5.0	0									
Webster	8/13/07	41.321401	-85.675048		4	7.0	1		1							
Webster	8/13/07	41.325357	-85.674072		5	6.0	5		5							
Webster	8/13/07	41.323508	-85.67285		6	5.0	1		1							
Webster	8/13/07	41.326136	-85.671464		7	5.0	1		1	1	1					
Webster	8/13/07	41.326704	-85.669602		8	6.0	5		5							
Webster	8/13/07	41.327683	-85.672293		9	4.0	5		5							
Webster	8/13/07	41.3294	-85.672979		10	7.0	1		1							
Webster	8/13/07	41.329683	-85.672418		11	7.0	5		5							
Webster	8/13/07	41.329013	-85.669569		12	5.0	1		1							
Webster	8/13/07	41.328321	-85.666835		13	5.0	1		1							
Webster	8/13/07	41.3295	-85.666786		14	16.0	0									
Webster	8/13/07	41.330249	-85.667351		15	9.0	1		1							
Webster	8/13/07	41.330688	-85.668854		16	9.0	5		5							
Webster	8/13/07	41.331069	-85.669532		17	13.0	5		5							
Webster	8/13/07	41.332496	-85.66903		18	6.0	1		1							
Webster	8/13/07	41.333577	-85.670624		19	4.0	0									
Webster	8/13/07	41.33295	-85.671927		20	6.0	3		3							
Webster	8/13/07	41.332968	-85.674282		21	20.0	0									
Webster	8/13/07	41.331669	-85.674096		22	6.0	3		3							
Webster	8/13/07	41.331006	-85.673613		23	7.0	1		1							
Webster	8/13/07	41.329568	-85.674031		24	3.0	0									
Webster	8/13/07	41.328322	-85.674686		25	8.0	0									
Webster	8/13/07	41.329059	-85.678036		26	4.0	3		3						1	
Webster	8/13/07	41.326983	-85.676679		27	6.0	1		1							
Webster	8/13/07	41.326454	-85.677307		28	9.0	5		5							
Webster	8/13/07	41.326361	-85.678555		29	15.0	0									
Webster	8/13/07	41.32734	-85.679333		30	8.0	5		5		3					
Webster	8/13/07	41.327977	-85.680055		31	7.0	5		5							
Webster	8/13/07	41.327309	-85.682116		32	8.0	5		5							
Webster	8/13/07	41.326113	-85.681631		33	9.0	5		5							
Webster	8/13/07	41.327525	-85.68401		34	8.0	5		5							
Webster	8/13/07	41.329149	-85.682703		35	6.0	1		1	1						
Webster	8/13/07	41.330574	-85.683019		36	7.0	1		1	1	1					
Webster	8/13/07	41.329494	-85.684398		37	15.0	5		5							
Webster	8/13/07	41.328747	-85.685292		38	3.0	5		5							
Webster	8/13/07	41.331117	-85.684349		39	16.0	5		5							
Webster	8/13/07	41.331593	-85.686224		40	7.0	5		5							
Webster	8/13/07	41.331005	-85.687603		41	10.0	5		5							
Webster	8/13/07	41.330219	-85.689217		42	7.0	1		1							
Webster	8/13/07	41.329141	-85.688596		43	16.0	3		3							
Webster	8/13/07	41.328216	-85.688743		44	4.0	5		5		1					
Webster	0/13/07	41.327519	-05.689126		45	0.0	5		5							
Webster	8/13/07	41.328614	-85.690066		46	8.0	5		5							
Webster	8/13/07	41.330131	-85.690784		47	6.0	0									
Webster	8/13/07	41.329719	-85.691777		48	7.0	0									
Webster	8/13/07	41.32749	-85.69173		49	7.0	5		5							
Webster	8/13/07	41.326757	-85.690941		50	5.0	5	1	5			1				
Webster	8/13/07	41.32603	-85.689658		51	16.0	3		3							
Webster	8/13/07	41.325896	-85.688936		52	18.0	1		1							
Webster	8/13/07	41.327568	-85.690536		53	3.0	5		5							
Webster	8/13/07	41.329756	-85.693893		54	19.0	0									
Webster	8/13/07	41.329332	-85.695066		55	6.0	3		3							
Webster	8/13/07	41.328191	-85.694686		56	5.0	1			1						
Webster	8/13/07	41.326816	-85.693824		57	4.0	0									
Webster	8/13/07	41.325605	-85.693876		58	4.0	1			1						
Webster	8/13/07	41.325617	-85.691829		59	7.0	1		1							
Webster	8/13/07	41.325126	-85.691549		60	17.0	0									
Webster	8/13/07	41.324534	-85.692644		61	5.0	0									
Webster	8/13/07	41.323414	-85.692692		62	3.0	1		1	1			1			
Webster	8/13/07	41.32332	-85.691083		63	6.0	1		1							
Webster	8/13/07	41.323485	-85.689692		64	10.0	5		5							
Webster	8/13/07	41.322601	-85.691185		65	5.0	3				3					
Webster	8/13/07	41.321767	-85.691626		66	4.0	1		1							
Webster	8/13/07	41.321697	-85.690295		67	4.0	1		1							
Webster	8/13/07	41.323347	-85.687809		68	7.0	5		5							
Webster	8/13/07	41.32417	-85.686481		69	6.0	5		5			1				
Webster	8/13/07	41.323253	-85.686702		70	7.0	5	1	5					5		
Webster	8/13/07	41.321644	-85.686944		71	7.0	3		3							
Webster	8/13/07	41.319934	-85.687498		72	6.0	3		3							
Webster	8/13/07	41.320415	-85.686183		73	4.0	1		1							
Webster	8/13/07	41.321318	-85.685042		74	11.0	5		5							
Webster	8/13/07	41.322171	-85.684356		75	13.0	5		5							
Webster	8/13/07	41.322105	-85.683258		76	5.0	5		5		5					
Webster	8/13/07	41.32106	-85.683081		77	7.0	5		5							
Webster	8/13/07	41.320762	-85.68165		78	7.0	5		5							
Webster	8/13/07	41.321372	-85.681125		79	14.0	0									
Webster	8/13/07	41.321666	-85.679908		80	6.0	3		3							
Webster	8/13/07	41.322163	-85.679844		81	17.0	0									
Webster	8/13/07	41.322867	-85.678588		82	13.0	1		1							
Webster	8/13/07	41.323632	-85.677928		83	19.0	0									
Webster	8/13/07	41.323143	-85.677106		84	7.0	0									
Webster	8/13/07	41.323565	-85.675299		85	6.0	0									
Webster	8/13/07	41.322657	-85.675355		86	6.0	1		1							
Webster	8/13/07	41.32139	-85.677314		87	4.0	1		1							
Webster	8/13/07	41.320744	-85.676896		88	3.0	0									
Webster	8/13/07	41.320372	-85.674631		89	4.0	0									
Webster	8/13/07	41.318903	-85.673059		90	4.0	0									

Backwater Lake

Lake	Date	Latitude	Longitude	Site	Depth	RAKE	MYSP2	POCR3	CEDE4	NAFL	ELCA7	NI?TE
Backwater	4/3/07	41.316254	-85.669875	91	5.0	5			5			
Backwater	4/3/07	41.315939	-85.670434	92	5.0	1		1	1			
Backwater	4/3/07	41.315862	-85.669501	93	5.0	1	1	1	1			
Backwater	4/3/07	41.316198	-85.668809	94	4.0	5		1	5			
Backwater	4/3/07	41.316788	-85.668349	95	4.0	5			5			
Backwater	4/3/07	41.317241	-85.667566	96	3.0	1			1			
Backwater	4/3/07	41.316892	-85.666831	97	4.0	5			5			
Backwater	4/3/07	41.317415	-85.666162	98	4.0	1			1			
Backwater	4/3/07	41.318221	-85.665680	99	3.0	1			1			
Backwater	4/3/07	41.318167	-85.664508	100	3.0	5	1		5	1		
Backwater	4/3/07	41.318374	-85.663447	101	3.0	3	1		3			
Backwater	4/3/07	41.317699	-85.663698	102	4.0	5	1		5			
Backwater	4/3/07	41.317406	-85.664560	103	3.0	5	5					
Backwater	4/3/07	41.316923	-85.665397	104	3.0	5	5		5			
Backwater	4/3/07	41.316376	-85.666478	105	4.0	5	5		3			
Backwater	4/3/07	41.315993	-85.667427	106	6.0	3		1	3			
Backwater	4/3/07	41.315629	-85.668169	107	6.0	3	1	1	3			
Backwater	4/3/07	41.314988	-85.668931	108	3.0	1		1	1			
Backwater	4/3/07	41.314365	-85.668688	109	4.0	3			3			
Backwater	4/3/07	41.314447	-85.667905	110	5.0	5	1		5			
Backwater	4/3/07	41.314922	-85.667116	111	5.0	3		1	3			
Backwater	4/3/07	41.315458	-85.666214	112	5.0	5	3	1	3			
Backwater	4/3/07	41.315991	-85.665165	113	4.0	3	3					
Backwater	4/3/07	41.316500	-85.664112	114	3.0	5	5	1	1			
Backwater	4/3/07	41.316994	-85.663343	115	3.0	5	1		5			
Backwater	4/3/07	41.315931	-85.663902	116	3.0	3	3					
Backwater	4/3/07	41.315474	-85.664531	117	3.0	5	3		3			
Backwater	4/3/07	41.315064	-85.665298	118	4.0	1	1	1	1			
Backwater	4/3/07	41.314703	-85.665978	119	5.0	5		1	5			
Backwater	4/3/07	41.314382	-85.666535	120	5.0	5			5			
Backwater	4/3/07	41.313807	-85.667116	121	4.0	5			5			
Backwater	4/3/07	41.313494	-85.666492	122	5.0	5			5			
Backwater	4/3/07	41.313974	-85.665416	123	4.0	5	1		5		1	
Backwater	4/3/07	41.314584	-85.664716	124	3.0	3	1		3			
Backwater	4/3/07	41.315132	-85.664031	125	5.0	5	5		1			
Backwater	4/3/07	41.315500	-85.663293	126	3.0	3	3		1			
Backwater	4/3/07	41.315180	-85.662309	127	3.0	3	3		1			
Backwater	4/3/07	41.314543	-85.662288	128	4.0	5	5		1			
Backwater	4/3/07	41.313907	-85.662839	129	4.0	5	5	1	3		1	
Backwater	4/3/07	41.313435	-85.663621	130	4.0	1	1		1			1
Backwater	4/3/07	41.31309	-85.66257	131	3.0	5			5			
Backwater	4/3/07	41.31337	-85.66130	132	3.0	1		1	1			
Backwater	4/3/07	41.31344	-85.66033	133	2.0	1			1		1	
Backwater	4/3/07	41.31271	-85.66073	134	2.0	1		1	1			
Backwater	4/3/07	41.31185	-85.66089	135	4.0	3			3		1	
Backwater	4/3/07	41.31104	-85.66067	136	4.0	5		1	3		1	
Backwater	4/3/07	41.31009	-85.66052	137	5.0	5			5		1	
Backwater	4/3/07	41.30922	-85.66009	138	5.0	5		1	5			1
Backwater	4/3/07	41.30836	-85.66026	139	3.0	5			5			1
Backwater	4/3/07	41.30732	-85.65989	140	3.0	1			1			1

Lake	Date	Latitude	Longitude	Site	Depth	RAKE	MYSP2	POCR3	CEDE4	NAFL	POPE6	POPU7	ELCA7	POZO
backwater	5.30.07	41.316254	-85.669875	91	3.0	5			5					
backwater	5.30.07	41.315939	-85.670434	92	4.0	3			3					
backwater	5.30.07	41.315862	-85.669501	93	5.0	3			3					
backwater	5.30.07	41.316198	-85.668809	94	5.0	5			5					
backwater	5.30.07	41.316788	-85.668349	95	3.0	5			5					
backwater	5.30.07	41.317241	-85.667566	96	2.0	5			5					
backwater	5.30.07	41.316892	-85.666831	97	3.0	5			5					
backwater	5.30.07	41.317415	-85.666162	98	3.0	1			1					
backwater	5.30.07	41.318221	-85.665680	99	2.0	5			5					
backwater	5.30.07	41.318167	-85.664508	100	3.0	5			5					
backwater	5.30.07	41.318374	-85.663447	101	2.0	5			5					
backwater	5.30.07	41.317699	-85.663698	102	2.0	3			3					
backwater	5.30.07	41.317406	-85.664560	103	3.0	3	1		3					
backwater	5.30.07	41.316923	-85.665397	104	3.0	3			3					
backwater	5.30.07	41.316376	-85.666478	105	4.0	5			5					
backwater	5.30.07	41.315993	-85.667427	106	5.0	3			3		1			
backwater	5.30.07	41.315629	-85.668169	107	6.0	1			1					
backwater	5.30.07	41.314988	-85.668931	108	2.0	5			1				5	
backwater	5.30.07	41.314365	-85.668688	109	3.0	1			1					
backwater	5.30.07	41.314447	-85.667905	110	4.0	3			3					
backwater	5.30.07	41.314922	-85.667116	111	5.0	3			3					
backwater	5.30.07	41.315458	-85.666214	112	4.0	3	1		3					
backwater	5.30.07	41.315991	-85.665165	113	4.0	5			5					
backwater	5.30.07	41.316500	-85.664112	114	3.0	5			5					
backwater	5.30.07	41.316994	-85.663343	115	2.0	5			5					
backwater	5.30.07	41.315931	-85.663902	116	4.0	5			5					
backwater	5.30.07	41.315474	-85.664531	117	3.0	5	1		3					
backwater	5.30.07	41.315064	-85.665298	118	3.0	3			3					
backwater	5.30.07	41.314703	-85.665978	119	5.0	3		1	3					
backwater	5.30.07	41.314382	-85.666535	120	4.0	3	3							
backwater	5.30.07	41.313807	-85.667116	121	4.0	3			3					
backwater	5.30.07	41.313494	-85.666492	122	3.0	1			1					
backwater	5.30.07	41.313974	-85.665416	123	4.0	3			1					
backwater	5.30.07	41.314584	-85.664716	124	3.0	3			3					
backwater	5.30.07	41.315132	-85.664031	125	4.0	1			1					
backwater	5.30.07	41.315500	-85.663293	126	4.0	1			1					
backwater	5.30.07	41.315180	-85.662309	127	2.0	5			5		1			
backwater	5.30.07	41.314543	-85.662288	128	3.0	5			5					
backwater	5.30.07	41.313907	-85.662839	129	3.0	3			3					
backwater	5.30.07	41.313435	-85.663621	130	3.0	3	1		3					
backwater	5.30.07	41.31309	-85.66257	131	4.0	3	1	1	3				1	
backwater	5.30.07	41.31337	-85.66130	132	2.0	5		1	3					3
backwater	5.30.07	41.31344	-85.66033	133	2.0	5	1	3	5			1	1	
backwater	5.30.07	41.31271	-85.66073	134	2.0	5		5	5			1	1	
backwater	5.30.07	41.31185	-85.66089	135	3.0	3			3					
backwater	5.30.07	41.31104	-85.66067	136	4.0	5			5					
backwater	5.30.07	41.31009	-85.66052	137	4.0	3			3					
backwater	5.30.07	41.30922	-85.66009	138	4.0	5			5					
backwater	5.30.07	41.30836	-85.66026	139	3.0	3			3					
backwater	5.30.07	41.30732	-85.65989	140	3.0	5			5					

Lake	Date	Latitude	Longitude	Design	Site	Depth	RAKE	MYSP2	CEDE4	CH?AR	NAFL	POPE6	ELCA7
Backwater	8/13/07	41.316254	-85.669875		91	5.0	1		1		1		
Backwater	8/13/07	41.315939	-85.670434		92	4.0	0						
Backwater	8/13/07	41.315862	-85.669501		93	5.0	1		1				
Backwater	8/13/07	41.316198	-85.668809		94	5.0	5		5				
Backwater	8/13/07	41.316788	-85.668349		95	2.0	5		5				
Backwater	8/13/07	41.317241	-85.667566		96	3.0	5		5				
Backwater	8/13/07	41.316892	-85.666831		97	4.0	5		5				
Backwater	8/13/07	41.317415	-85.666162		98	4.0	3		1			1	
Backwater	8/13/07	41.318221	-85.665680		99	2.0	5		5				
Backwater	8/13/07	41.318167	-85.664508		100	2.0	1		1				
Backwater	8/13/07	41.318374	-85.663447		101	2.0	5		5				
Backwater	8/13/07	41.317699	-85.663698		102	4.0	5		5				
Backwater	8/13/07	41.317406	-85.664560		103	3.0	5		5				
Backwater	8/13/07	41.316923	-85.665397		104	4.0	5	1	5				
Backwater	8/13/07	41.316376	-85.666478		105	4.0	5		5	1			
Backwater	8/13/07	41.315993	-85.667427		106	6.0	5			5		1	
Backwater	8/13/07	41.315629	-85.668169		107	6.0	5		5				
Backwater	8/13/07	41.314988	-85.668931		108	3.0	1		1				
Backwater	8/13/07	41.314365	-85.668688		109	4.0	3		3				
Backwater	8/13/07	41.314447	-85.667905		110	4.0	3		3				
Backwater	8/13/07	41.314922	-85.667116		111	5.0	1		1				
Backwater	8/13/07	41.315458	-85.666214		112	5.0	5		5				
Backwater	8/13/07	41.315991	-85.665165		113	4.0	5	1	5			1	
Backwater	8/13/07	41.316500	-85.664112		114	3.0	5	1	5			1	
Backwater	8/13/07	41.316994	-85.663343		115	1.0	5		5				
Backwater	8/13/07	41.315931	-85.663902		116	2.0	5		5				
Backwater	8/13/07	41.315474	-85.664531		117	3.0	5	1	5				
Backwater	8/13/07	41.315064	-85.665298		118	4.0	5	1	5				
Backwater	8/13/07	41.314703	-85.665978		119	5.0	5	1	5				
Backwater	8/13/07	41.314382	-85.666535		120	4.0	3	3	1				
Backwater	8/13/07	41.313807	-85.667116		121	4.0	1		1				
Backwater	8/13/07	41.313494	-85.666492		122	4.0	3		3				
Backwater	8/13/07	41.313974	-85.665416		123	4.0	5	1	5				
Backwater	8/13/07	41.314584	-85.664716		124	3.0	5	1	5	1		1	
Backwater	8/13/07	41.315132	-85.664031		125	4.0	5	1	5			3	
Backwater	8/13/07	41.315500	-85.663293		126	2.0	5		5	1			
Backwater	8/13/07	41.315180	-85.662309		127	2.0	5	1	5	1			
Backwater	8/13/07	41.314543	-85.662288		128	2.0	5		5				
Backwater	8/13/07	41.313907	-85.662839		129	4.0	5		5				
Backwater	8/13/07	41.313435	-85.663621		130	3.0	5		5				
Backwater	8/13/07	41.31309	-85.66257		131	4.0	5		5				
Backwater	8/13/07	41.31337	-85.66130		132	1.0	5	3	5				1
Backwater	8/13/07	41.31344	-85.66033		133	2.0	5	1	5				1
Backwater	8/13/07	41.31271	-85.66073		134	2.0	5	3	5				
Backwater	8/13/07	41.31185	-85.66089		135	4.0	5	1	5				
Backwater	8/13/07	41.31104	-85.66067		136	3.0	3		3				
Backwater	8/13/07	41.31009	-85.66052		137	4.0	1	1	1				1
Backwater	8/13/07	41.30922	-85.66009		138	5.0	3		3				
Backwater	8/13/07	41.30836	-85.66026		139	4.0	3		3				
Backwater	8/13/07	41.30732	-85.65989		140	4.0	5		5				1

6.2 2008 Vegetation Control Permits

2008 Webster Lake Permit

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	APPLICATION FOR AQUATIC VEGETATION CONTROL PERMIT	**FOR OFFICE USE ONLY**	DEPARTMENT OF NATURAL RESOURCES
	State Form 26727 (R / 11-03)	License No.	Division of Fish and Wildlife
	Approved State Board of Accounts 1987		Commercial License Clerk
	☐ Whole Lake ☒ Multiple Treatment Areas	Date Issued	402 West Washington Street, Room W273
	Check type of permit	Lake County	Indianapolis, IN 46204
	INSTRUCTIONS: Please print or type information		FEE: $5.00

Applicant's Name	Lake Assoc. Name	
Webster Lake Conservation Association	Webster Lake Conservation Association	
Rural Route or Street		Phone Number
85 EMS W19		574-372-7291
City and State		ZIP Code
North Webster, IN		46555
Certified Applicator (if applicable)	Company or Inc. Name	Certification Number
Rural Route or Street		Phone Number
City and State		ZIP Code

Lake (One application per lake)	Nearest Town	County		
Webster Lake	North Webster	Kosciusko		
Does water flow into a water supply			☐ Yes	☒ No

Please complete one section for *EACH* treatment area. Attach lake map showing treatment area and denote location of any water supply intake.

Treatment Area #	1	LAT/LONG or UTM's	Center of bed @ N41.32367 W85.67219		
Total acres to be controlled	2.5	Proposed shoreline treatment length (ft)	2300	Perpendicular distance from shoreline (ft)	50
Maximum Depth of Treatment (ft)	8	Expected date(s) of treatment(s)	mid June		

Treatment method: ☒ Chemical ☐ Physical ☐ Biological Control ☐ Mechanical

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Reward and Nautique or Komeen

Plant survey method: ☒ Rake ☐ Visual ☐ Other (specify) Data taken from 5.07 T2 Survey & Species Observed

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	X	80
Chara	x	5
Eurasian watermilfoil	x	10
Slender naiad	x	5

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Treatment Area #	2	LAT/LONG or UTM's	Center of Bed at N41.32786 W85.67519				
Total acres to be controlled	4.6	Proposed shoreline treatment length (ft)	4000	Perpendicular distance from shoreline (ft)	50		
Maximum Depth of Treatment (ft)	8	Expected date(s) of treatment(s)	mid June				
Treatment method:	X Chemical	Physical	Biological Control	Mechanical			

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Reward and Nautique or Komeen

Plant survey method: X Rake x Visual Other (specify) Data taken from 5.07 T2 Survey & Species Observed

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	65
Slender naiad	x	10
Eurasian watermilfoil	x	10
Largeleaf pondweed		5
Chara	x	5
Sago pondweed	x	5

Treatment Area #	3	LAT/LONG or UTM's	Center of Bed @ N41.32842 W85.68379				
Total acres to be controlled	1.4	Proposed shoreline treatment length (ft)	1204	Perpendicular distance from shoreline (ft)	50		
Maximum Depth of Treatment (ft)	8	Expected date(s) of treatment(s)	mid June				
Treatment method:	X Chemical	Physical	Biological Control	Mechanical			

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Reward & Nautique or Komeen

Plant survey method: X Rake x Visual Other (specify) Data taken from 5.07 T2 Survey & Species Observed

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	65
Sago pondweed	x	5
Duckweed		5
Watermeal		5
Slender naiad	x	5
Eurasian watermilfoil	x	5
Spatterdock		5
Variable watermilfoil		5

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Treatment Area #	4	LAT/LONG or UTM's	Center of Bed at N41.33127 W85.68379				
Total acres to be controlled	3.25	Proposed shoreline treatment length (ft)	2854	Perpendicular distance from shoreline (ft)	50		
Maximum Depth of Treatment (ft)	8	Expected date(s) of treatment(s)	mid June				
Treatment method:	X Chemical	Physical	Biological Control	Mechanical			

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Reward and Nautique or Komeen

Plant survey method: X Rake x Visual Other (specify) Data taken from 5.07 T2 Survey & Species Observed

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	50
Slender naiad	x	10
Sago pondweed	x	10
American elodea	x	10
Duckweed		10
watermeal		5
		5

Treatment Area #	5	LAT/LONG or UTM's	Center of Bed @ N41.32565 W85.69400				
Total acres to be controlled	12.15	Proposed shoreline treatment length (ft)	10600	Perpendicular distance from shoreline (ft)	50		
Maximum Depth of Treatment (ft)	8	Expected date(s) of treatment(s)	mid June				
Treatment method:	X Chemical	Physical	Biological Control	Mechanical			

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Reward & Nautique or Komeen

Plant survey method: X Rake x Visual Other (specify) Data taken from 5.07 T2 Survey & Species Observed

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	30
Slender naiad	x	30
Chara	x	25
Sago pondweed	x	5
Eurasian watermilfoil	x	5
Duckweed		5

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Treatment Area #	6	LAT/LONG or UTM's	Center of Bed at N41.32041 W85.68114				
Total acres to be controlled	3.07	Proposed shoreline treatment length (ft)	2679	Perpendicular distance from shoreline (ft)	50		
Maximum Depth of Treatment (ft)	8	Expected date(s) of treatment(s)	mid June				
Treatment method:	X Chemical	Physical	Biological Control	Mechanical			
Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control.	Reward and Nautique or Komeen						
Plant survey method:	X Rake	x Visual	Other (specify)	Data taken from 5.07 T2 Survey & Species Observed			

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	70
Sago pondweed	x	10
Eurasian watermilfoil	x	5
Slender naiad	x	10
Largeleaf pondweed		5

Treatment Area #	7	LAT/LONG or UTM's	Center of Bed @ N41.31094 W85.67394				
Total acres to be controlled	11.25	Proposed shoreline treatment length (ft)	9802	Perpendicular distance from shoreline (ft)	50		
Maximum Depth of Treatment (ft)	8	Expected date(s) of treatment(s)	mid June				
Treatment method:	X Chemical	Physical	Biological Control	Mechanical			
Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control.	Reward and Nautique or Komeen						
Plant survey method:	X Rake	x Visual	Other (specify)	Data taken from 5.07 T2 Survey & Species Observed			

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	60
Eurasian watermilfoil	x	5
Spatterdock		5
Slender naiad	x	5
Duckweed		5
Watermeal		5
Flatstem pondweed	x	5
Sago pondweed	x	5
American elodea	x	5
Naiad	X	20

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Treatment Area #	8	LAT/LONG or UTM's	Treat EWM and CLP wher it occurs (determine following survey)
Total acres to be controlled		Proposed shoreline treatment length (ft)	Perpendicular distance from shoreline (ft)
Maximum Depth of Treatment (ft)		Expected date(s) of treatment(s)	Curlyleaf April and Milfoil late May early June

Treatment method: [X] Chemical [ ] Physical [ ] Biological Control [ ] Mechanical

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. April aquathol K for CLP and May or June Renovate for EWM

Plant survey method: [X] Rake [X] Visual [ ] Other (specify) Data collected during spring t2 and visual survey

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail		40
Slender naiad		15
Curlyleaf pondweed	x	15
Eurasian watermilfiol	x	10
Chara		10
Sago pondweed		5
Flatstem Pondweed		3
Water stargrass		2

INSTRUCTIONS: Whoever treats the lake fills in "Applicant's Signature" unless they are a professional. If they are a professional company who specializes in lake treatment, they should sign on the "Certified Applicant" line.

Applicant Signature	Date
Certified Applicant's Signature	Date

FOR OFFICE ONLY

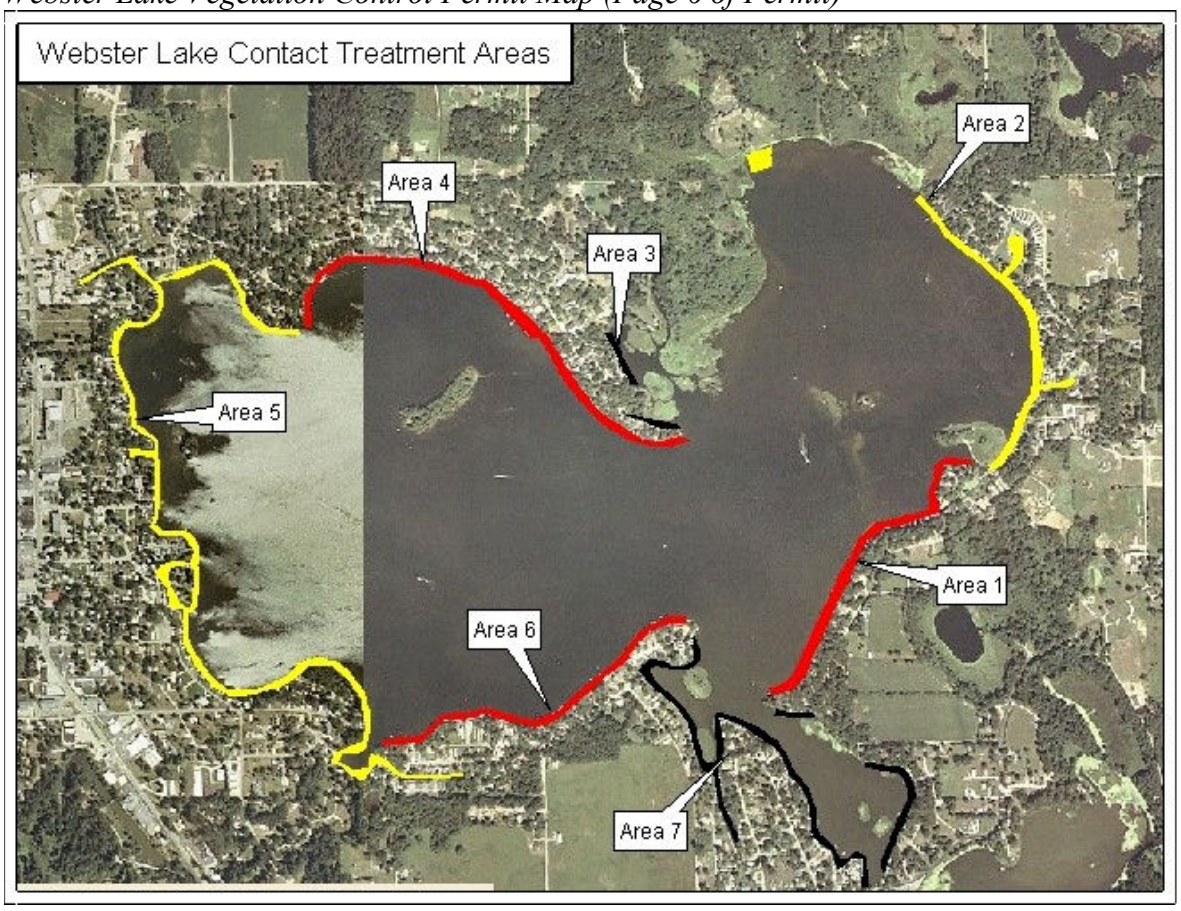
	Fisheries Staff Specialist
[ ] Approved [ ] Disapproved	
	Environmental Staff Specialist
[ ] Approved [ ] Disapproved	

Mail check or money order in the amount of $5.00 to:

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE
COMMERCIAL LICENSE CLERK
402 WEST WASHINGTON STREET ROOM W273
INDIANAPOLIS, IN 46204

AQUATIC CONTROL

Webster Lake Vegetation Control Permit Map (Page 6 of Permit)



2008 Backwater Lake Permit

			Return to: Page 1 of 4
	APPLICATION FOR AQUATIC VEGETATION CONTROL PERMIT State Form 26727 (R / 11-03) Approved State Board of Accounts 1987 ☐ Whole Lake ☒ Multiple Treatment Areas Check type of permit *INSTRUCTIONS: Please print or type information*	**FOR OFFICE USE ONLY** License No. Date Issued Lake County	DEPARTMENT OF NATURAL RESOURCES Division of Fish and Wildlife Commercial License Clerk 402 West Washington Street, Room W273 Indianapolis, IN 46204 FEE: $5.00

Applicant's Name Webster Lake Conservation Association	Lake Assoc. Name Webster Lake Conservation Association	
Rural Route or Street 85 EMS W19		Phone Number 574-372-7291
City and State North Webster, IN		ZIP Code 46555
Certified Applicator (if applicable)	Company or Inc. Name	Certification Number
Rural Route or Street		Phone Number
City and State		ZIP Code
Lake (One application per lake) Backwater Lake	Nearest Town North Webster	County Kosciusko
Does water flow into a water supply	☐ Yes	☒ No

Please complete one section for *EACH* treatment area. Attach lake map showing treatment area and denote location of any water supply intake.

Treatment Area #	1	LAT/LONG or UTM's	Lower 2/3 of lake early season treatment
Total acres to be controlled	75	Proposed shoreline treatment length (ft)	Perpendicular distance from shoreline (ft)
Maximum Depth of Treatment (ft)	6	Expected date(s) of treatment(s)	mid April

Treatment method: ☐ Chemical ☐ Physical ☐ Biological Control ☐ Mechanical

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Treat Eurasian watermilfoil and CLP with 2,4-D and Aquathol

Plant survey method: ☒ Rake ☒ Visual ☐ Other (specify) Data from spring t2

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail		40
Curlyleaf Pondweed	x	20
Eurasian watermilfoil	X	20
elodea		10
Spatterdock		5
Water lily		5

Page 2 of 4

Treatment Area #	2	LAT/LONG or UTM's	Center of bed at N41.31430 W85.66890		
Total acres to be controlled	4	Proposed shoreline treatment length (ft)	2050	Perpendicular distance from shoreline (ft)	75
Maximum Depth of Treatment (ft)	5	Expected date(s) of treatment(s)	mid June		

Treatment method: [X] Chemical [ ] Physical [ ] Biological Control [ ] Mechanical

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Reward, komeen and aquathol will be used to control vegetation near docks and in boat lanes

Plant survey method: [X] Rake [X] Visual [ ] Other (specify) data from spring t2

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	50
Eurasian watermilfoil	x	10
Curlyleaf pondweed	x	10
Duckweed		5
Watermeal		5
Spatterdock		5
Elodea	x	5
Sago pondweed	x	5
Small pondweed	x	3
Flatstem pondweed	x	2

Treatment Area #	3	LAT/LONG or UTM's	Center of bed at N41.3186 W85.66890		
Total acres to be controlled	2	Proposed shoreline treatment length (ft)	1068	Perpendicular distance from shoreline (ft)	75
Maximum Depth of Treatment (ft)	5	Expected date(s) of treatment(s)	mid June		

Treatment method: [X] Chemical [ ] Physical [ ] Biological Control [ ] Mechanical

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Reward, Komeen, and Aquathol will be used to control vegetation in boating lane and around docks

Plant survey method: [X] Rake [X] Visual [ ] Other (specify)

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	50
Eurasian watermilfoil	x	10
Curlyleaf pondweed	x	10
Duckweed		5
Watermeal		5
Spatterdock		5
Elodea	x	5
Sago pondweed	x	5
Small pondweed	x	3
Flatstem pondweed	x	2

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Treatment Area #	4	LAT/LONG or UTM's	Center of bed at N41.31757 W85.66218		
Total acres to be controlled	1	Proposed shoreline treatment length (ft)	570	Perpendicular distance from shoreline (ft)	50-75
Maximum Depth of Treatment (ft)	4	Expected date(s) of treatment(s)	1-Jun		

Treatment method: [X] Chemical [ ] Physical [ ] Biological Control [ ] Mechanical

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. Reward, Komeen, and Aquathol

Plant survey method: [X] Rake [X] Visual [ ] Other (specify)

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Coontail	x	50
Eurasian watermilfoil	x	10
Curlyleaf pondweed	x	10
Duckweed		5
Watermeal		5
Spatterdock		5
Elodea	x	5
Sago pondweed	x	5
Small pondweed	x	3
Flatstem pondweed	x	2

INSTRUCTIONS: Whoever treats the lake fills in "Applicant's Signature" unless they are a professional. If they are a professional company who specializes in lake treatment, they should sign on the "Certified Applicant" line.

Applicant Signature	Date
Certified Applicant's Signature	Date

FOR OFFICE ONLY

	Fisheries Staff Specialist
[ ] Approved [ ] Disapproved	
	Environmental Staff Specialist
[ ] Approved [ ] Disapproved	

Mail check or money order in the amount of $5.00 to:

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE
COMMERCIAL LICENSE CLERK
402 WEST WASHINGTON STREET ROOM W273
INDIANAPOLIS, IN 46204

AQUATIC CONTROL

Backwater Lake Vegetation Control Permit Map (Page 4 of Permit)